



Thermal testicular contraception: a contraceptive method that is still not well known: a descriptive study among general practitioners of Auvergne-Rhône-Alpes by self-administered questionnaire

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Year: 2022

**THERMAL TESTICULAR CONTRACEPTION :
A CONTRACEPTIVE METHOD THAT IS STILL NOT WELL KNOWN:
A DESCRIPTIVE STUDY OF GENERAL PRACTITIONERS IN
AUVERGNE-RHÔNE-ALPES BY SELF-ADMINISTERED
QUESTIONNAIRE**

THESIS
FOR THE STATE DIPLOMA OF DOCTOR OF MEDICINE

SPECIALITY: GENERAL MEDICINE

By Ms Fanny TRAVERS

[Personal data].

and Ms Wanda VALLET

[Personal data].

THESIS PUBLICLY SUBMITTED TO THE FACULTY OF GRENOBLE
05/04/2022

BEFORE THE JURY COMPOSED OF :

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Prof. Patrick IMBERT

Members :

Dr Farouk BENDAMENE (thesis director) Dr Lucie

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Fanny's thanks

To Professor Patrick IMBERT;

Who has done us the honour of chairing this jury. Please find here the expression of my deepest gratitude.

To Dr Marie SICOT,

Who knew how to nourish my attraction for gynaecology from my very first internship and who made me aware of the cause of abortion. Thank you for your kindness, your patience during my first ultrasound tests, your humanity and also for your office (very often squatted by the team).

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Wanda's thanks

To the Members of our Jury

To [Professor Patrick IMBERT](#)

Who does me the honour of chairing this jury. Please find here the expression of my sincere gratitude for the interest you have shown in our work.

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To Dr. [Marie SICOT](#)

For this superb semester of gynaecology spent with you, for all your knowledge, your advice and your kindness.

Thank you for your daily commitment to women.

To Dr. [Anne BRUNET-HUMBERT](#),

For your commitment to the orthogénie centre and family planning, your openness, discussions about abortion, contraception, gynaecology, ...

Thanks to this we were able to find our thesis topic.

Thank you for accepting to judge this work.

To [Fanny](#),

Having exchanged numbers and gone for a drink in the early days of boarding school, see where we are now.

Thank you for agreeing to do this work with me,

Thank you for staying the course for this thesis, we went through some pretty tough times, a change of subject to start all over again and difficulties in our personal lives.

Thank you for being there for me, thank you for these incredible hikes, thank you for these evenings, for this magnificent trek in the Queyras which will remain forever engraved in my memory.

You are an amazing person, don't ever forget that. I love you.

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To my family

To [my mum](#), to [my dad](#), thank you for everything you have taught me in life, for the values you have given us with my brothers and especially for all the love you have surrounded me with since I was a child.

You are extraordinary parents and I thank you for the magical childhood I had in Villers city

Thank you for believing in me and supporting me.

Even if it is not always easy to talk about your feelings, and you cannot always express what is inside you, never forget that I love you, that I love you so much.

To my brothers, [Lulu](#) and [Thib](#), thank you in fact simply thank you for being you, thank you for being my brothers and for always being there!

You're beautiful, you're funny, you're kind, you're intelligent, you're a bit of a male me, but a bit more annoying, I must say. I couldn't have dreamt of anything better.

I would go to the end of the world with you and for you and I will always be there, that's what family means!

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To [my godmother](#), my second mum, thank you for always being there for me/us, you are amazing, don't ever forget it, even when you laugh without her Hii!

To [my sponsor](#), thank you for being the way you are and for always believing in yourself, you are inspiring.

To [my grandparents](#), you are not here today, I know that the road is complicated, but you are with me in my heart and you are not so far away and I know that you are very proud of me.

Thank you for always being there for me.

To my goddaughter [Capucine](#), thank you for being part of our family and for bringing your little ray of sunshine to everyone. And thank you to my parents Chloé and Alan who obviously worked hard for this.

To all the other members of my family, thank you for being part of my life, I will never forget you.

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To my friends

Les copines de Villers,

To [Aline](#) and [Marion](#) and [Tiff](#), the first to come into my life, we have known each other for so long. Thank you for all the moments spent by your side, it would be too long to list them all, for the primary, secondary and high school years with you, for the badminton outings, for the catholic sessions, for the evenings, for the moments of laughter and tears.

To your three respective darlings, (Damien, Flomiche, Quentin), you had better take care of them, they are worth their weight in gold.

To [Julia](#), for all the moments I've spent with you since I've known you from high school, the volleyball, the parties, our bullshit in Morteau, the roommate and this superb memory of this trip to Mexico, I would have liked to do it with no one else but you.

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To the [Paulines](#), for having met you, for having lived great high school years with you, for having continued to see each other at Beak and for having many things in common, thank you and be happy in your little life that is built over time, to Clément to Olivier and to future Baby Pauline.

To [Elise](#), you know what I think of you, you're a great person and never forget that I'm here if you need me to talk to you and bring out the best in you.

To [Marie](#), thank you for all those evenings with you at the Lycée and I'm happy that you have found your way with all your little wolves. A big kiss to you all.

To my friends in Besançon,

To [my Nono](#) what can I say about you...

Since you have been in my life you have changed me, you inspire me, you are full of joy and my smile lights up when I see you. We know each other so well, I feel like you know and feel everything I want to say and feel.

Now that you know how I am when I'm in a relationship, I've realised that I've given you my heart too, you're part of me.

In any case, you'd better not go away again, or at least take me with you, because let's face it, this wonderful trip to the USA is just the beginning of a long adventure. I love you!

To [Jojo](#), I've known you for a long time now, we've been through a lot of adventures, the end of high school, the first years of college doing nothing all day while we were playing with our future, this humanitarian trip to Vietnam, and all the future adventures to come.

You are an incredibly strong person my Jojo, even though I know there is a tender little heart inside. Always stay close to me, it does me too much good.

Thank you also for bringing your darling [Teddy](#) into my life who has now become an essential friend for me.

[Lolo](#), my compatriot, you whom I met in Bezak and who also came to Grenoble, you have always been there for me, to chat, to go out and above all to cheer me up and make me laugh. Even if you don't always say everything, you know that I will always be there for you and I will maintain this friendship forever because you are so important to me.

[Justine](#), my little Juju, you who stayed in Bezak, I'm so happy that we didn't move away from each other because you mean a lot to me and I love seeing you with all your questions, your good mood and your great discussions. I am happy that you can start your family life and don't forget that even if we are far away, don't hesitate, I am here and nothing changes between us.

And to all the other friends who were part of my adventure at Bezak' and are still part of my life [Adeline](#) and her darling [Vincent](#) (and the two little wolves), [Melaine](#), the volleyball friends ([Jojo](#), [Anaïs](#), [Jounette](#), [Alex](#), [Célo](#) ...)

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By the time I write this thank you, I think I have already told you many things about how I feel about you.

But know one thing: you changed my life the moment you let me into yours, you brought me laughter, joy, magic moments and above all love since you have been there with me.

Thank you for all these moments at your side, with you I feel myself I feel good and I have never been so happy.

You dazzle me every time I see you, when I think of you I have my best smile and my heart beats so hard when I am in your arms.

I would give anything for you.

I love you as much as I can. I love you as much as I can. Thank you!

SUMMARY

Introduction: Despite the existence of a wide range of contraceptive options, the increase in the number of abortions reflects the need to offer couples new solutions for controlling their fertility. In contrast to the large number of contraceptive options available for women, the range of devices available for men is still limited. Thermal male contraception (TTC), developed some thirty years ago, still suffers from a lack of medical democratisation, which counterbalances the growing interest of men in it. General practitioners, the main prescribers of contraception, still do not seem sufficiently informed to offer this alternative to their patients.

Objectives: To carry out an inventory of the knowledge of general practitioners in the AURA region (Auvergne Rhône-Alpes) on thermal testicular contraception. Analysis of their representations of TTC and their motivation to benefit from additional information.

Material and method: A cross-sectional descriptive study was carried out via a self-administered questionnaire sent by e-mail to doctors in Auvergne-Rhône-Alpes between July 2021 and September 2021. The results were analysed using Jamovi software with the Chi2 test.

Results: We analysed 153 responses. Of these responses, 30.1% of doctors seemed to be familiar with the CTT, particularly in the form of an undergarment (29.1% versus 17.9% for the ring).

The place of practice, the completion of additional training related to contraception and the mode of practice (planning centre or orthogenetic centre) have a statistically significant link with the knowledge of the TTC among the doctors questioned.

After the presentation of a brief and synthetic information, 94.6% of them show an interest in additional information and 53.5% feel ready to offer it to their patients.

It can be noted that 51.3% are in favour of the popularisation of CTT, so that it is offered to patients in the same way as female contraceptives.

Conclusion: Male contraception is a topic that motivates many national and international clinical trials. Even if most of them are still at the experimental stage, the results are promising. In response to increasing patient demand, GPs would be willing to support CTT projects, provided that additional information and sound scientific evidence are available.

Key words: male contraception, thermal, non-hormonal

ABSTRACT

Introduction: Despite the existence of a wide range of contraceptive options, the increase in number of abortions reflects the need to provide new contraceptive solutions and to place the couple at the heart of the debate. In contrast to the large number of contraceptive options for women, the arsenal of devices for men is still limited. Thermal male contraception, developed 30 years ago, still suffers a lack of medical democratization which counterbalances with men's growing interest in it. Yet, General Practitioners, who are the main prescribers of contraception, do not seem sufficiently informed to offer this alternative to their patients.

Objectives: To carry out an inventory of the knowledge of General Practitioners about thermal testicular contraception in the AURA region. Analysis of their representations of thermal testicular contraception (TTC) and their motivation to benefit from additional information.

Material and method: Realization of a quantitative cross-sectional study of descriptive type via a questionnaire sent by mail to the physicians or distributed by the CDOM in Auvergne-Rhône-Alpes between July 2021 and September 2021. The results were analyzed using the Jamovi software with the Chi2 test.

Results: We included 153 responses in the analysis. Among these, 30.1% of doctors appeared to be aware of the TTC, most notably in the form of the undergarment (29.1% versus 17.9% for the ring).

The location of practice, additional training courses about contraception and the mode of practice (planning or orthogenetic center) all have a statistically significant link with the knowledge of the TTC among the doctors questioned.

After presenting them a brief and synthetic piece of information, 94.6% showed an interest in additional information and 53.5% felt ready to suggest it to their patients. We can underline that 51.3% are in favour of popularizing TTC, so that it could be suggested to patients the same way female contraceptives are.

Conclusion: Male contraception is a topic that motivates a number of national and international clinical trials. Although still in the experimental stage, the results are promising. In response to the increasing demand of patient, General Practitioners would be willing to support TTC projects, provided that additional information and solid scientific evidence are available.

Key words: male contraception, thermal, non-hormonal

List of abbreviations

IVG: Voluntary interruption of pregnancy

AURA: Auvergne-Rhône Alpes

CTT: Testicular thermal contraception

CNIL: Commission Nationale Informatique et Libertés

IVG: Voluntary Intervention of Pregnancy

IUD: Intrauterine device

URPS: Regional Union of Health Professionals

UGA: University of Grenoble Alpes

DU: University Diploma

CDOM: Conseil Départemental de l'Ordre des Médecins

ANSM : Agence Nationale de Sécurité du Médicament

CE: Conformité Européenne

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Preamble

After completing our externship (in Besançon and Rennes), we both met and immediately became friends at the faculty of Grenoble. We then decided to do our thesis together on male thermal contraception.

Indeed, during our semester in "gynaecology and women's health", we noticed a new craze for this device among patients. More and more patients were looking for medical support for their contraception; the follow-up was mainly done through regular spermograms. Their motivations were multiple: some lived alone and were looking for better control of their fertility, while others had a partner but wanted to be involved in the couple's contraception in the same way as her.

Faced with this growing demand on the part of patients, their difficulty in finding support from the medical profession seemed to us to be a problem.

It is in this context that we wanted to know the proportion of GPs in our region who are aware of the existence of CTT and wish to support its use in their patients.

I. INTRODUCTION

Contraception in France today

Since the adoption of the Neuwirth law (1960) under the aegis of Simone VEIL, contraception has been officially authorised in France (1). Despite the existence to date of a substantial contraceptive arsenal (2,3), it seems that the French contraceptive model is not very flexible (4). According to the FECOND survey (5), it is characterised by the use of condoms at the beginning of sexual life, then the pill when intercourse becomes more frequent and finally the IUD when couples have completed their parenthood project (6). Female contraceptives are the most widely used (by more than 70% of French couples), especially via medical methods (71.8% of women; 36.5% of whom use the pill) (7)(8).

Despite the large contraceptive panel available, the number of abortions has continued to rise in recent years: no less than 222,000 abortions took place in 2020, a record since the 1990s(9).

This finding reflects the contraceptive impasse in which women seeking abortion find themselves: in fact, no less than 72% of terminations are carried out in women who already have a contraceptive method (10) .

Societal developments: the acceptability of sharing contraception

Beyond being a women's issue, contraception seems to be more and more a couple's concern (11).

Several international studies highlight that heterosexuals are now willing to change their practice by using male contraception to reduce the mental burden on women and thus share the responsibility for their fertility (12-14).

Men seem to want to be more involved in their couple's contraception and actively support their partner (15-20). As many as one third of couples worldwide rely on male contraception despite the limited options available (condoms are the most commonly used model [18]) (16).

Thermal testicular contraception

Apart from condoms, withdrawal and permanent contraception by vasectomy, other methods for men exist but are still little known: hormonal and thermal contraception.

Hormonal methods are based on the use of exogenous testosterone, with or without a progestin, to inhibit endogenous testosterone production and spermatogenesis. Different presentations exist; injectable forms, pills and topical forms by transdermal impregnation gels. However, certain side effects (acne, decreased libido, mood changes or pain at the injection sites) limit their acceptability to patients (21).

It is in this context that male thermal contraception has been able to develop nationally and internationally. The latter consists of wearing either an undergarment (briefs, jockstrap) or a ring that holds the testicles up inside the inguinal canals, at the level of the root of the penis (22) (Figure 1). The testicles are then at a sufficiently high temperature (37°C instead of the usual 35°C) to block spermatogenesis. It is believed that wearing the device for at least 15 hours a day would allow the contraceptive threshold to be lowered to a satisfactory level(22).

Contraceptive efficacy is effective after about three months (since human spermatogenesis lasts 72 days).

A person wishing to "contract" thermally can use the briefs, the ring or both alternately. The maximum recommended period of use is four years. Indeed, the current lack of scientific data does not allow us to encourage the use of CTT beyond four consecutive years, without a break. (23)

What about the effectiveness of the method

The use of CTT does not lead to azoospermia but causes the sperm count to fall below the contraceptive threshold considered to be effective. The latter is reached when the concentration of motile spermatozoa is less than one million per millilitre of ejaculate. (23) Indeed, according to the literature, this concentration is associated with a Pearl Index of 1% (24)

According to the literature, the thermal undergarment has been shown to be effective on 51 couples during 536 exposure cycles. Only one pregnancy was observed, due to misuse of the method. (22) The Pearl Index would therefore be less than 0.5 and this contraception can be considered highly effective according to World Health Organization (WHO) standards (25).

Effectiveness is monitored by spermograms: three months after the start of contraception (to check that the number of spermatozoa

mobile has become less than 1 million/mL) and then every three months (26).

However, further regulatory studies involving a larger sample of volunteers should be encouraged.



SOURCE: Philippe Debongnie for Jassogne, Pierre. "Male contraception: the whole question". Alter Echos, 26 February 2020
<https://www.alterechos.be/contraception-masculine-le-tour-de-la-question/>, accessed on 25/01/2022

Figure 1: Representation of the different CTT devices and their mode of operation by testicular ascent

Although male contraception is beginning to arouse more and more interest among patients, better information and awareness among health professionals is still necessary for its diffusion. Indeed, the fear of adverse effects (such as discomfort, irreversibility, impotence and testicular cancer) remains a major obstacle to their involvement. (27)

Knowledge and medical support

Although it has existed since the 1970s, male thermal contraception seems to be poorly disseminated among general practitioners. Indeed, there is no official recommendation to date and it is not included in the initial medical training programme (28). However, the new generations of doctors are interested in it and wish to be trained before offering it to their patients (27).

In this context, the main objective of our thesis was to assess the knowledge of general practitioners in Auvergne-Rhône-Alpes about thermal testicular contraception. Our secondary objectives were to find out the representations of general practitioners on TTC and to evaluate their interest in specific training on the subject. At the end of our work, we looked for a "typical profile" of GPs willing to offer thermal testicular contraception to their patients.

II. MATERIAL AND METHOD

1. Study design

We conducted a cross-sectional descriptive study using a self-administered questionnaire.

The questionnaires were sent by e-mail to the various councils of the order of general practitioners in Auvergne-Rhône Alpes. The latter chose whether or not to distribute it.

We were also able to count on the "snowball effect" created by the sharing of our survey via professional networks (URPS, regional colleges of teaching general practitioners in the AURA region) and personal networks (former university training supervisors and their contacts, tutors, family planning doctors).

A first mailing was made in July 2021, followed by a reminder in September 2021.

The email included a standard message containing the introduction, the purpose of the study, the names of the researchers and the link to the questionnaire. Attached to the email was an information letter that addressed the protection of the data collected in the questionnaire and the purpose of the study (Appendix 2) (Appendix 4).

The questionnaire was created using the *Limesurvey* software, the software licence being hosted on the UGA servers. It was composed of several parts:

The first part looks at socio-demographic characteristics (sex, age, department and place of practice) as well as mode of practice, participation in additional training related to contraception and participation in a teaching activity.

A second part concerns the professional experience of contraception in general (whether female and/or male) with women, men and the couple as a whole.

A third part deals with the knowledge of the TTC.

A fourth section looks at the interest in the CTT (interest in training, and in what form).

A fifth part seeks to identify GPs' representations of CTT.

The last part concerns the evaluation of a practical summary on the management of patients wishing to undergo CTT, inspired by a flyer provided by family planning 38 . (Appendix 1)

2. Study population

The study population was composed of AURA general practitioners.

The inclusion criteria were: female or male physicians, having chosen the specialty of general medicine, with or without a doctorate, with or without a practice in the Auvergne-Rhône Alpes region.

The exclusion criteria used for this study were: general practitioners with no male patients, those practising exclusively outside the Auvergne Rhône Alpes region and those practising a specialty other than general medicine

We focused our research on general practitioners since they are the first port of call in the care of patients wishing to "contracept". They are also the main health professionals accessible to male patients, along with family planning clinics, to discuss contraception.

We centralised our study in Auvergne-Rhône Alpes because we had a healthcare network there that facilitated the distribution of the questionnaire.

3. Statistical analysis

The data was extracted directly into an Excel spreadsheet from the *Limesurvey* software.

The variables in our study are all qualitative. They are either nominal (such as gender, place of practice, department of practice, ..) or ordinal (most of them being Likert scales).

For the primary outcome (knowledge of TTC), this is a composite outcome. For this purpose, we combined the two questions concerning knowledge of the ring and undergarment type of TTC into a single entity "Knowledge of TTC as a whole".

We grouped the responses "I know it well" and "I have some knowledge of it" to define participants who are familiar with TTC. The responses "I have only heard of it" and "no" would characterise doctors who are not familiar with TTC. We arbitrarily chose to do this because the response "only heard of it" indicated insufficient knowledge of TTC to propose and follow it up.

For our study, we decided to take into account all responses, including incomplete ones, in order to increase our sample size, by presenting the number of missing data for each data item.

For the statistical analyses, we used the software *JAMOV* version 1.6.23. In the statistical analyses, we considered a result with a p-value <0.05 as significant.

We first performed a bivariate analysis using the Chi2 test of independence for unpaired data.

A contingency table was produced for each bivariate analysis. When we had a marginal number < 5 among the results, we discarded them from the statistical analysis for more validity of the test.

When the theoretical number of cells was less than 5, in view of the robustness of the Chi2 test, we decided to take them into account only if they represented less than 20% of the total number in the contingency table.

A multivariate analysis was carried out in order to establish a "standard profile" of GPs.

4. Data protection

During the study, we ensured that we complied with the RGPD standards and limited the risk of data leakage. (Appendix 3). This data will be kept until the final research report is written (approximately 1 year) and then archived for 15 years on a personal computer storage space for the two investigators (external hard drives stored in a locked office).

Our questionnaire contains some non-sensitive but indirectly identifiable data (socio-demographic characteristics such as gender, place of practice,...). These data are only accessible by the two interviewers and the two people in charge of the study.

For data collection, the responses were anonymous. The anonymisation process was initially carried out by the *Limesurvey* software, identifying the participant by a number, according to the chronological order of response to the questionnaire.

The authorisation of the CNIL (Commission nationale de l'informatique et des libertés) was obtained before starting the study. (Appendix 3)

The information sheet attached to the contact email to the doctors contained a description of the collection of non-sensitive personal data. Participants were free to withdraw at any time, to modify their data and to authorise access or not (Appendix 4).

A confidentiality clause was signed by both investigators and a "compliance undertaking form" approved by both study managers. (Annex 5, Annex 6)(Annex 7, Annex 8)

III. RESULTS

1. Study population

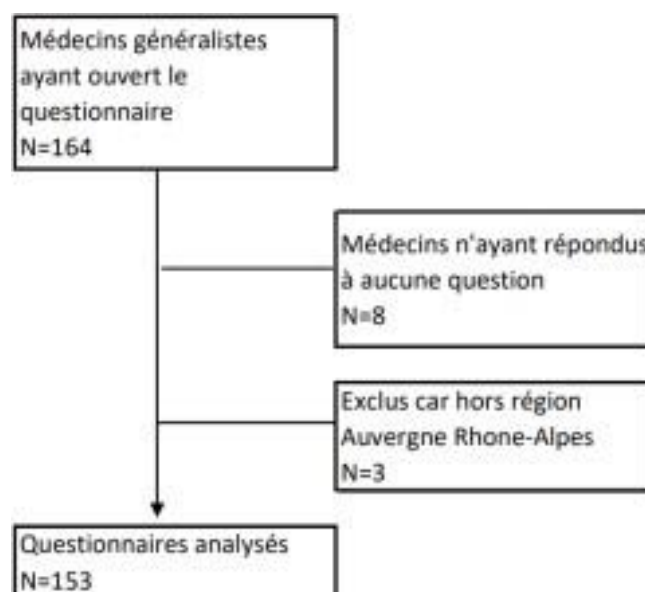


Figure 2: Flow chart

We obtained 164 responses, of which 11 participants were excluded. Of the remaining 153 responses, 91 questionnaires were fully completed.

2. Socio-demographic data

The participants in the study were mainly women (73.2%) aged between 25 and 35 years (45.1%) and practising in Haute-Savoie (60.4%) or Isère (23.4%). The other departments were less well represented: 11% in Haute Loire, 4.5% in Savoie and 0.7% in the Loire.

Their activity was mainly in semi-rural areas (51.6%) and with several people (either in group practices 53.9% or in multidisciplinary health centres 26.3%).

It should be noted that part of the population studied was working in an orthogenetic or family planning centre (6.6%).

In our study, we asked ourselves about the impact of having additional training and/or qualifications related to contraception. Some of the participants have additional knowledge in this field, since 16.5% have a DU in gynaecology, 11% have training in orthogenics and 0.6% have a DU in sexology.

It was important to see whether teaching activity had an impact on knowledge of TTC, as the majority of them had no clinical or academic teaching activity (59.0%). (Table 1)

3. Analyses of the primary endpoint

a. Knowledge of thermal testicular contraception

As a reminder, we voluntarily excluded certain socio-demographic categories from the analysis when they were represented by a marginal number < 5 (the two heads of clinic and the two university lecturers, the only doctor with a DU in sexology, the only doctor from the Loire region and the two doctors over 65 years old).

In our sample 30.1% of doctors are aware of thermal testicular contraception ($n=46/153$).

We noted a significant link between knowledge of the CTT and place of practice ($p=0.039$), practice in an orthogénie centre or family planning ($p<0.001$) and prior training in contraception (through a gynaecology or orthogénie DU) ($p<0.001$).

Furthermore, we did not find any significant difference between the notion of CTT and the gender, age, teaching or non-teaching activity or department of practice of the doctors interviewed.

However, female respondents tended to be more familiar with the TTC than their male colleagues ($p=0.185$). The same is true for younger doctors ($p=0.189$) (Table 1).

		Connaissez-vous la CTT ?		Total	p-value
		Non	Oui		
Sexe	Féminin	75 (67.0%)	37 (33.0%)	112	0,185
	Masculin	32 (78.0%)	9 (22.0%)	41	
	Total	107	46	153	
Age	25 ans - 35 ans	43 (62.3%)	26 (37.7%)	69	0,189
	36 ans - 45 ans	34 (79.1%)	9 (20.9%)	43	
	46 ans - 55 ans	15 (65.2%)	8 (34.8%)	23	
	56 ans - 65 ans	13 (81.3%)	3 (18.8%)	16	
	Total	106	46	151	
Département(s) d'exercice	Haute Loire	12 (75.0%)	4 (25.0%)	16	0,352
	Haute Savoie	67 (72.8%)	25 (27.2%)	92	
	Isere	21 (58.3%)	15 (41.7%)	36	
	Savoie	4 (57.1%)	3 (42.9%)	7	
	Total	106	47	152	
Lieu d'exercice	Rural	15 (68.2%)	7 (31.8%)	22	0,039
	Semi-rural	62 (78.5%)	17 (21.5%)	79	
	Urbain	30 (57.7%)	22 (42.3%)	52	
	Total	107	46	153	
Mode(s) d'exercice	Cabinet de groupe	62 (69.7%)	27 (30.3%)	89	<0,001
	Exercice seul	12 (85.7%)	2 (14.3%)	14	
	Maison de sante pluridisciplinaire	33 (75.0%)	11 (25.0%)	44	
	Planning familial centre d'orthogenie	1 (9.1%)	10 (90.9%)	11	
	Remplacement	1 (20.0%)	4 (80.0%)	5	
	Total	109	54	163	
Formation(s) complémentaire (s)	DU gynecologie	13 (48.1%)	14 (51.9%)	27	<0,001
	Formation orthogenie	6 (33.3%)	12 (66.7%)	18	
	Non	89 (76.7%)	27 (23.3%)	116	
	Total	108	53	161	
Activité(s) d'enseignement	Maitre de stage des universites	42 (71.2%)	17 (28.8%)	59	0,832
	Non	64 (69.6%)	28 (30.4%)	92	
	Total	106	45	151	

Table 1: Table of knowledge of the overall TTC and socio-demographic characteristics

b. The ring or the underwear

Subsequently, we sought to find out more precisely in which form TTC was most widely used in our sample.

According to our results, the undergarment is more democratized in our population since 29.1% of the doctors know it (including 5.3% "I know it well" and 23.8% "I have some knowledge of it") against 17.9% for the ring.

All contraceptive devices are significantly better known among doctors working in planning or orthogenic centres and among those who have previously completed additional training in contraception ($p < 0.001$) (Tables 2 and 3).

The underwear/jockstrap appeared to be significantly more popular among doctors aged 25-35 and 46-55 ($p = 0.048$). (Table 2)

The ring is significantly better known by doctors practising in the urban region of Isère ($p=0.011$ and $p=0.013$ respectively).

Although no significance was found, it should be noted that urban doctors also tended to be more familiar with the contraceptive undergarment than rural and semi-rural doctors. (Table 2 and 3)

Teaching activity and gender were not significantly related to knowledge of the TTC, regardless of the scheme studied. (Table 2 and 3)

		Connaissez-vous la CTT de type sous-vêtement?				Total	p-value
Sous-vêtement		Non	J'en ai seulement entendu parler	J'en ai quelques notions	Je la connais bien		
Sexe	Féminin	41 (36.9%)	35 (31.5%)	30 (27.0%)	5 (4.5%)	111	0,086
	Masculin	23 (57.5%)	8 (20.0%)	6 (15.0%)	3 (7.5%)	40	
	Total	64	43	36	8	151	
Age	25 ans - 35 ans	18 (26.5%)	25 (36.8%)	22 (32.4%)	3 (4.4%)	68	0,048
	36 ans - 45 ans	24 (55.8%)	11 (25.6%)	5 (11.6%)	3 (7.0%)	43	
	46 ans - 55 ans	12 (52.2%)	3 (13.0%)	6 (26.1%)	2 (8.7%)	23	
	56 ans - 65 ans	8 (53.3%)	4 (26.7%)	3 (20.0%)	0 (0.0%)	15	
	Total	62	43	36	8	149	
Département(s) d'exercice	Haute Loire	9 (56.3%)	3 (18.8%)	4 (25.0%)	0 (0.0%)	16	0,137
	Haute Savoie	43 (46.7%)	26 (28.3%)	21 (22.8%)	2 (2.2%)	92	
	Isere	11 (30.6%)	10 (27.8%)	10 (27.8%)	5 (13.9%)	36	
	Savoie	1 (14.3%)	3 (42.9%)	2 (28.6%)	1 (14.3%)	7	
	Total	64	42	37	8	151	
Lieu d'exercice	Rural	9 (42.9%)	5 (23.8%)	7 (33.3%)	0 (0.0%)	21	0,138
	Semi-rural	39 (50.0%)	23 (29.5%)	13 (16.7%)	3 (3.8%)	78	
	Urbain	16 (30.8%)	15 (28.8%)	16 (30.8%)	5 (9.6%)	52	
	Total	64	43	36	8	151	
Mode(s) d'exercice	Cabinet de groupe	37 (42.0%)	26 (29.5%)	22 (25.0%)	3 (3.4%)	88	<0,001
	Exercice seul	8 (57.1%)	4 (26.8%)	2 (14.3%)	0 (0.0%)	14	
	Maison de sante pluridisciplinaire	21 (47.7%)	12 (27.3%)	9 (20.5%)	2 (4.5%)	44	
	Planning familial centre d'orthogenie	1 (9.1%)	0 (0.0%)	5 (45.5%)	5 (45.5%)	11	
	Remplacement	1 (20.0%)	0 (0.0%)	4 (80.0%)	0 (0.0%)	5	
	Total	68	42	42	10	162	
Formation(s) complémentaire(s)	DU gynecologie	5 (18.5%)	8 (29.6%)	10 (37.0%)	4 (14.8%)	27	< 0,001
	Formation orthogenie	1 (5.6%)	5 (27.8%)	8 (44.4%)	4 (22.2%)	18	
	Non	59 (50.9%)	32 (27.6%)	22 (19.0%)	3 (2.6%)	116	
	Total	65	45	40	11	161	
Activité(s) d'enseignement	Maitre de stage des universites	26 (44.1%)	16 (27.1%)	12 (20.3%)	5 (8.5%)	59	0,513
	Non	38 (41.8%)	27 (29.7%)	23 (25.3%)	3 (3.3%)	91	
	Total	64	43	35	8	150	

Table 2: Knowledge of CTT underwear type

		Connaissez-vous la CTT de type anneau?					
Anneau		Non	J'en ai seulement entendu parler	J'en ai quelques notions	Je la connais bien	Total	p-value
Sexe	Féminin	71 (64.0%)	18 (16.2%)	16 (14.4%)	6 (5.4%)	111	0,699
	Masculin	27 (67.5%)	8 (20.0%)	3 (7.5%)	2 (5.0%)	40	
	Total	98	26	19	7	151	
Age	25 ans - 35 ans	41 (60.3%)	14 (20.6%)	10 (14.7%)	3 (4.4%)	68	0,885
	36 ans - 45 ans	30 (69.8%)	5 (11.6%)	5 (11.6%)	3 (7.0%)	43	
	46 ans - 55 ans	15 (65.2%)	3 (13.0%)	3 (13.0%)	2 (8.7%)	23	
	56 ans - 65 ans	11 (73.3%)	3 (20.0%)	1 (6.7%)	0 (0.0%)	15	
	Total	97	25	19	8	149	
Département(s) d'exercice	Haute Loire	10 (62.5%)	5 (31.3%)	1 (6.3%)	0 (0.0%)	16	0,013
	Haute Savoie	62 (67.4%)	14 (15.2%)	15 (16.3%)	1 (1.1%)	92	
	Isere	21 (58.3%)	6 (16.7%)	3 (8.3%)	6 (16.7%)	36	
	Savoie	6 (85.7%)	0 (0.0%)	0 (0.0%)	1 (14.3%)	7	
	Total	99	25	19	8	151	
Lieu d'exercice	Rural	12 (57.1%)	7 (33.3%)	2 (9.5%)	0 (0.0%)	21	0,011
	Semi-rural	57 (73.1%)	13 (16.7%)	6 (7.7%)	2 (2.6%)	78	
	Urbain	29 (55.8%)	6 (11.5%)	11 (21.2%)	6 (11.5%)	52	
	Total	98	26	19	8	151	
Mode(s) d'exercice	Cabinet de groupe	62 (70.5%)	15 (17.0%)	9 (10.2%)	2 (2.3%)	88	< 0,001
	Exercice seul	10 (71.4%)	2 (14.3%)	2 (14.3%)	0 (0.0%)	14	
	Maison de sante pluridisciplinaire	29 (65.9%)	8 (18.2%)	5 (11.4%)	2 (4.5%)	44	
	Planning familial centre d'orthogenie	0 (0.0%)	2 (18.2%)	3 (27.3%)	6 (54.5%)	11	
	Remplacement	1 (20.0%)	1 (20.0%)	2 (40.0%)	1 (20.0%)	5	
	Total	102	28	21	11	162	
Formation(s) complémentaire(s)	DU gynecologie	12 (44.4%)	4 (14.8%)	7 (25.9%)	4 (14.8%)	27	< 0,001
	Formation orthogenie	6 (33.3%)	2 (11.1%)	5 (27.8%)	5 (27.8%)	18	
	Non	84 (72.4%)	20 (17.2%)	10 (8.6%)	2 (1.7%)	116	
	Total	102	26	22	11	161	
Activité(s) d'enseignement	Maitre de stage des universites	39 (66.1%)	10 (16.9%)	5 (8.5%)	5 (8.5%)	59	0,42
	Non	59 (64.8%)	16 (17.6%)	13 (14.3%)	3 (3.3%)	91	
	Total	98	26	18	8	150	

Table 3: Knowledge of the ring-type TTC

4. Analysis of secondary endpoints

a. Representations of CTT to general practitioners Doctors faced

with a request for CTT

Of the population studied, 42.1% of doctors had already been confronted with a request for a CTT (n=64/152).

The results of our bivariate analyses of CTT applications according to socio-demographic characteristics are not analysable using the Chi2 test. Indeed, the proportion of subgroups with a size < 5 in the contingency table is higher than 20% of the total size.

In addition, when attempting to use Fisher's test at numbers < 5, the results were either not significant or not applicable. (Appendix 9)

Representations of the effectiveness of the TTC

In our study, we proposed a self-assessment of the effectiveness of CTT. The more the physician assumed that the CTT was effective, the more he chose a response close to 100%.

We found that more than half of the doctors thought that CTT was more than 61% effective (n=90/150) while 30% thought it was more than 81% effective (n=43/150).

Only one socio-demographic characteristic influences this. The most important factor for self-assessment is age. Doctors aged 25-35 and 46-55 seemed more confident about the effectiveness of CTT (p=0.048).

Theoretical advantages and disadvantages of CTT We then asked the doctors about their representations of the advantages and disadvantages of CTT.

The most frequently cited advantages are the non-hormonal mode of action (17.42%), reversibility (15.03%), its place as an alternative to female contraception (14.23%) and the reduction of the partner's mental burden about contraception (13.70%). (Figure 3)

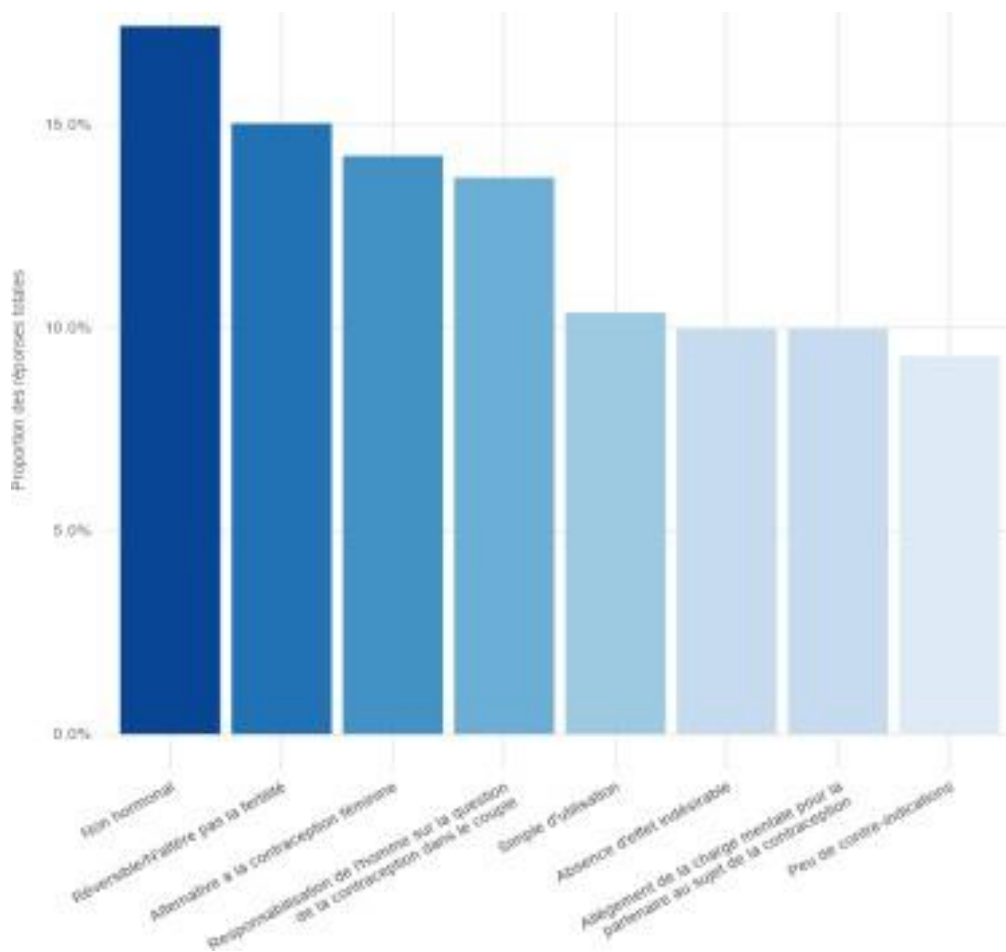


Figure 3: The benefits of CTT

Of the disadvantages proposed, the most frequently cited were discomfort (17.02%) and too long wearing time (15.21%). (Figure 4)

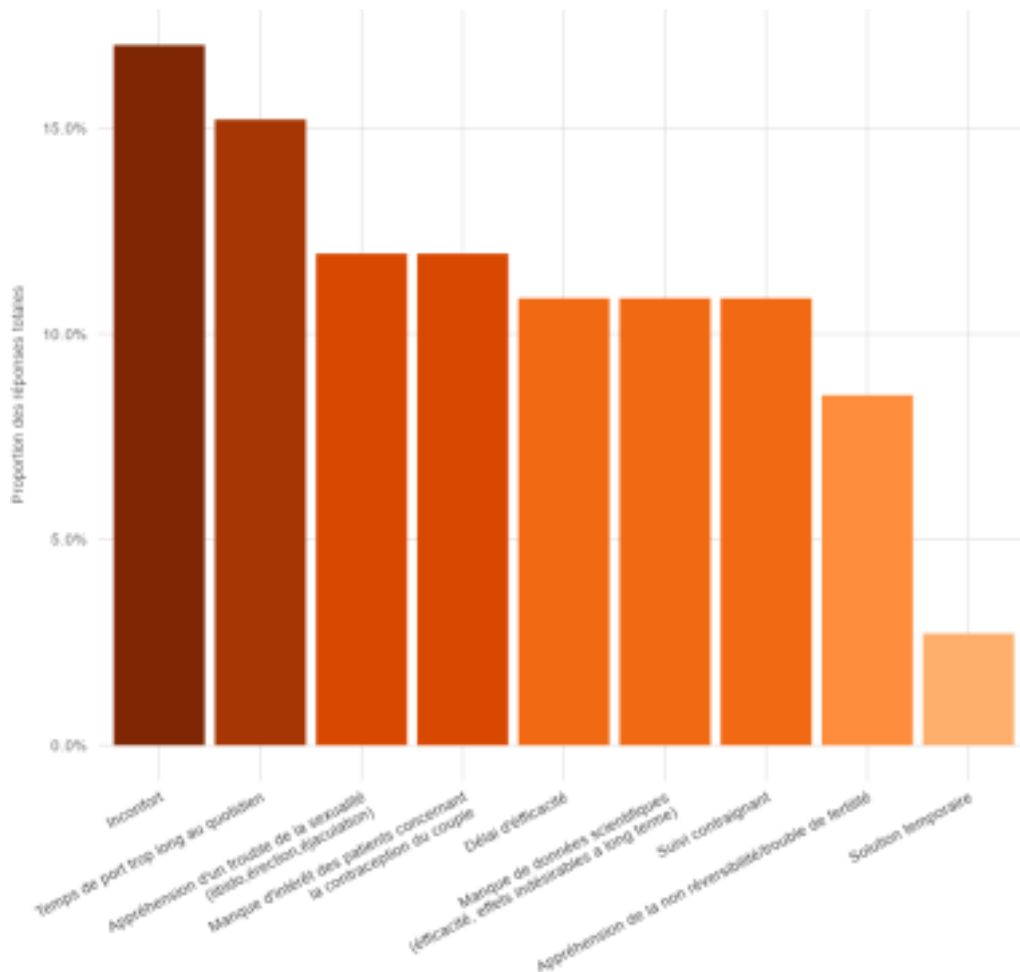


Figure 4: Disadvantages of CTT

Of the doctors who answered the last question, 51.3% (59/115) were in favour of popularising TTC so that it is offered to patients as much as female contraceptives.
The socio-demographic characteristics of each doctor on this question have no influence.

b. GPs' desire to train in CTT GPs' sense of personal capacity

More than half of our population does not feel sufficiently informed about CTT 50.7% (n=75/148) and 32.4% (n=48/148) have just heard about it. Conversely, only 6.8% (n=10/148) of the doctors surveyed felt sufficiently informed to propose and accompany a patient requesting CTT.

We were able to observe a static link between the feeling of personal capacity and certain socio-demographic characteristics:

In fact, doctors practising in urban areas felt more informed about how to manage a CTT project than their colleagues in semi-rural or rural areas (p=0.051).

Similarly, those working in an orthogenic or planning centre and those who had previously completed additional training in contraception thought they were already able to offer TTC to their patients (p<0.001).

Age, gender and department of practice of the professional are factors without significant influence. (Appendix 10)

Interest in further information

We then asked whether the doctors in our sample were interested in more information about CTT: 94.6% (n=140/148) were.

Women were significantly more interested than men in this proposal, with 98.2% of women wanting more information compared to 84.2% of men (p=0.001).

No other socio-demographic characteristics influence this desire. The GPs in our population prefer brochures and training by other professionals to increase their knowledge.

The professionals who answered that they were not interested in additional information (n=8/148) justified their answer. Thus, two did not feel concerned since they had very few requests from their patients. Two others already have their own sources of information. The four

The latter explained that they were not in favour of this contraception: *"unfavourable benefit/risk balance", "is equivalent to withdrawal or the thermal curve, therefore VOID", "women have won this right (contraception) after many battles, because it is inherent to their sexual freedom (due to the risk of pregnancy)", "restrictive, duration of wearing contraception, reliability"*.

Offer CTT to patients

After a summary presentation of the CTT, 53.5% (n=77/144) of the doctors questioned felt ready to offer it to their patients. On the contrary, 20.1% (n=29/144) do not know, 18.8% (n=27/144) need more information and 7.6% (n=11/144) of them are not convinced. No differences were observed according to socio-demographic characteristics.

c. Typical profile of a GP who knows about CTT

We then attempted to carry out multivariate analyses in order to obtain a "typical profile" of doctors familiar with the CTT. However, as the sample size was too small, we were not able to establish a usable statistical relationship.

5. Other analyses

a. Professional experience of contraception

According to Table 4, contraception is discussed more frequently with women than with men during consultations.

When patients present as a couple, 33.4% (n=51/153) of the doctors discuss contraception "systematically" or "often".

Abord de la contraception		
Fréquence	Avec les femmes	Avec les hommes
Jamais	0 (0.0%)	40 (26.1%)
A la demande	39 (25.5%)	75 (49.0%)
De temps en temps	3 (2.0%)	31 (20.3%)
Souvent	75 (49.0%)	6 (3.9%)
Systématiquement	36 (23.5%)	1 (0.7%)
TOTAL	153	153

Table 4: Approach to contraception according to patient gender

Approach to contraception "systematically" according to the doctor's socio-demographic characteristics

Younger doctors, aged 25-35, especially women, discuss contraception with their patients significantly more often than their colleagues ($p=0.015$; $p=0.004$).

It is more specifically initiated with men by doctors practising in an orthogeny/planning centre and those with prior training in contraception ($p=0.005$; $p=0.045$).

On the other hand, the place of practice, whether it is the department or the environment (urban, semi-rural or rural) has no significant influence on the approach to contraception in the consultation.

b. Physicians' feedback on the study

At the end of the questionnaire, participants were given the opportunity to add a free comment. In this way, we received 42 responses out of the 153 doctors questioned.

No less than a third of them were satisfied with the information shared through the questionnaire, its brief presentation of the TTC and the provision of information sources:

"It's a good idea to catch up on our knowledge", "Thank you for the information provided and the links made available, it's very instructive!"

"Thank you for this thesis which, for me, goes in the direction of men's participation in couples' contraception."

Another third was still sceptical about the constraints and effectiveness of the device. The acceptability of the method to the wife also gave rise to some reservations:

"this method is still in its infancy, with little feedback, few users and quite restrictive to be effective",

"Too restrictive (15h/d!), the woman will always have the afterthought of a risk." "Will women trust men to take responsibility for contraception???!",

"the maximum duration of 4 years remains a limit"

A scientific justification of the effectiveness of the method by means of a Pearl Index is also very much in demand by professionals.

V. DISCUSSION

Main objective: The popularity of the CTT in the Auvergne-Rhône-Alpes

region In our sample, the CTT is already known in 2021 by a number of general practitioners, particularly in the form of underwear (29.1% versus 17.9% for the ring).

The proportion of GPs who are aware of this method of contraception in our population is higher in towns, among doctors with more advanced training in gynaecology and those practising in planning or orthogenic centres. Furthermore, and contrary to previous studies, CTT is equally popular among male and female doctors (27). The age of the latter does not appear to be a significant criterion either.

Secondary Objective 1: Representations of the CTT among AURA GPs

Efficiency

When GPs in the region were asked about the effectiveness of CTT, they did not appear to be more than 61%-80%. The latter would benefit from being known since the latest figures in the literature are more optimistic (15). The contraceptive threshold recommended in CTT follow-up protocols is 1 million *motile spermatozoa/mL* (23). However, the contraceptive threshold recognised by the WHO, allowing a method to be considered effective according to its Pearl Index, refers to a threshold of < 1 million spermatozoa/mL. In this case, why is it suggested that we should only look at the number of motile sperm cells when monitoring CTT? Is it because of a lack of scientific evidence? The effectiveness of the method is currently the subject of several experimental studies. (29)

Advantages and disadvantages:

Due to its increasing popularity, CTT raises a number of questions about its acceptability. The advantages (non-hormonal, reversible process with few side effects) and disadvantages (long daily wearing time and possible discomfort) found in our study are much the same as those already highlighted in user research projects. (27)

Secondary Objective 2: General practitioners seeking additional information

The whole of the population studied, without distinction of age, gender or place of practice, seems to be in favour of support for their patients requesting CTT. This is a promising response, found on a national scale in other studies, to the growing demand from couples in need of contraception. (27)

At present, a majority of doctors still do not consider themselves sufficiently informed on the subject. There is a slight difference when we interpreted our results according to age, as the youngest doctors (25-35 years) consider themselves to be slightly more knowledgeable than their colleagues.

However, most of the participants wanted more information (94.6%). In the study by Amouroux M. and all, women also responded that they were more interested in new information about TTC than their male colleagues (27). This interest, influenced by gender, could motivate future studies aimed at understanding prescribers' disincentives.

The benefits and limitations of the study

The benefits of our study

An innovative subject, in tune with the times

The first asset of our work is above all its innovative subject in tune with the evolution of societal mentalities. Indeed, although TTC has existed for more than thirty years, this method has only recently gained notoriety since a growing number of heterosexual couples have wished to share the mental burden of their fertility (30, 31, 32, 33, 34).

The studies carried out until now have mostly explored the desire and motivation of patients but very little that of health professionals (27). However, if the growing interest of users has already been proven, our project aims to respond to their demand for support by looking at professionals and their representation.

Finally, by focusing on general practitioners, this study shows the interest of practitioners in their patients' contraception and their motivation to support them in this project. Beyond the patient-doctor relationship, our work also brings doctors together, since they are almost unanimous in their demand for additional information and a majority of them say they are ready to offer TTC to their patients.

A contraceptive method with multiple benefits

The main advantage of TTC according to the doctors in our study is its non-hormonal mode of action. Indeed, as with female contraceptives, it seems right to offer users natural devices other than condoms or withdrawal. The acceptability of male hormonal contraceptives remains mixed to date, with a hypothetical acceptability of the pill of 44% in Hong Kong and 83% in Cape Town being demonstrated internationally. Hypothetical acceptability of injectable contraception is 32% in Edinburgh and 62% in Cape Town. The majority of men believe that a new method of male contraception has yet to be developed (35). It is therefore in this context that research and development projects for new male thermal devices make sense (29).

In view of the growing number of abortions over the last three years, it is clear that the effectiveness of the contraceptive method used by men also has an impact on women and their physical and mental health. Recent scientific data have shown that women are increasingly accepting of their partner's involvement (36,37,38,39): 70% of women worldwide would be prepared to rely solely on their partner to manage the couple's fertility. In contrast, the proportion of women who currently prefer to control the risk of pregnancy alone through personal contraception is very low (around 2%) (40).

However, in order to smooth out the distribution of the mental burden within the couple, the first thing to think about is bringing up the subject of contraception in consultation with the men.

The approach to contraception in the male population

Our study allows us to highlight an important postulate: contraception is less frequently discussed with men/couples compared to consultations with single women in the AURA region. Perhaps it would be interesting to ask men about their contraception, if only once, in the same way as their medical history. It would not seem surprising to find that they are involved in their couple's contraception. This has been highlighted in several international studies (41,42,43,44). No less than 80% of men using contraception (in this case oral hormonal) are satisfied with it and 77% would recommend it (45).

Encouraging results despite a small number of staff

Despite the wide scope of the survey and the partial feedback from the practitioners we asked, we could only establish our results on a limited number of people. However, these initial results are promising: CTT is a subject of sufficient interest to the region's doctors for 95% of them to want more information. We were not able to analyse the typical profile of the general practitioner accompanying CTT, but future work with a broader spectrum should be encouraged and can be inspired by our results.

The limitations of our study

Limitations upstream of the study

We chose to conduct our study on a regional basis in order to facilitate the dissemination of our questionnaire and the collection of data within the time constraints imposed on us. In order to limit selection bias, we chose to share our questionnaire through large regional networks.

In our questionnaire, we were able to suggest answers to participants when we asked them about the advantages and disadvantages of TTC. We then tried to limit the prejudgment bias as much as possible by drawing on previous research projects on CTT and by choosing features that were often suggested. Participants were also given the opportunity to add free comments at the end of the questionnaire.

Limitations that persist when analysing the results

Firstly, there is still a selection bias as the sample analysed is not representative of our target population. It is essentially made up of general practitioners from Haute-Savoie. The dissemination of our questionnaire was largely supported by the Haute-Savoie and Haute-Loire General Practitioners' Associations (CDOM), which systematically distributed it by email to all practitioners in the department. The other CDOMs preferred to put it online on their websites or not to respond to our request.

There is also a self-selection bias through participation in our voluntary questionnaire. It would make sense that the subjects who volunteer for the study have common characteristics (e.g. an attraction to the issue of contraception) that may be different from those who do not participate in the study.

As our questionnaire relies on practitioners' memories of their professional practice, it is also not free from memory bias.

In our statistical analysis, we chose to take into account all the responses that we were able to collect, even if sometimes the doctors' participation in the questionnaire was only partial. This choice allowed us to exploit a larger number of responses but it also exposed us to an interpretation bias (analysis of 153 questionnaires, 91 of which were complete).

Although the first results obtained are promising, they are limited by the small number of participants. However, these results could motivate future studies of greater magnitude, both national and international.

The CTT and the future

According to our results, CTT still suffers from its recent notoriety and the lack of solid scientific data on its effectiveness and safety. On a national scale, the same reluctance is found among general practitioners (27). This recent emergence, without any reassuring scientific evidence at present, does not allow CTT to be included in the initial medical training programme. In the future, solid scientific justification could give health professionals sufficient confidence to offer it to their patients.

Latest measures on the testicular contraceptive ring

Despite this initial positive feedback indicating the interest of general practitioners in CTT, the ANSM recently suspended its marketing on 10 December 2022. Its use is prohibited in the absence of any CE marking, the only element that guarantees its effectiveness and safety of use. Until then, the use of the ring may only be possible in the context of an authorised clinical trial. It is recommended that doctors who have ring users in their practice advise them to use another method of contraception within 6 months of stopping its use. After this period, it is recommended to carry out a spermogram in order to check fertility. Furthermore, attention should also be paid to any discomfort or difficulty in micturition experienced by the ring wearer, as the risk of urethral stenosis has not yet been ruled out. (46)(47)

Underwear still allowed

While waiting for the results of clinical trials on the contraceptive ring, the briefs and jockstrap can still be used. Their effectiveness and reversibility, which have been the main reasons for reluctance, have been confirmed in a recent pilot study. Abdelhamid and all. demonstrated a drastic drop in total sperm count/mL after 45 days of wearing the device, making interpretation of the spermogram by FISH impossible. Then 180 days after the undergarment was discontinued, the aneuploidy induced by the moderate increase in testicular temperature was completely reversible. (48)

Male/female contraception: equal to equal?

According to our research, the general practitioners in the population studied do not have a significant opinion on the importance of TTC in relation to female contraceptives. This position reinforces the need to democratise this practice, its effectiveness and its acceptability in order to broaden our contraceptive catalogue, which is currently very focused on women.

IV. CONCLUSION

A certain number of GPs in Auvergne-Rhône-Alpes are already familiar with thermal testicular contraception: 30.1% of them have at least "some knowledge" of it, particularly in the form of underwear. The place of practice (urban rather than rural), the completion of additional training related to contraception and the mode of practice (in a planning or orthogenic centre) have a positive influence on the awareness of the CTT among the doctors questioned.

After the presentation of a brief and synthetic information about the concept, almost all (94.6%) of the participants were interested in additional information. Moreover, a majority of them were willing to offer it to their patients and even seemed to be in favour of its democratisation. It seems justifiable to them that it should be offered, in the same way as female contraceptives, if the results of the experimental research underway support its effectiveness and long-term safety.

Male contraception is a subject that is currently motivating a number of national and international clinical trials. Even if they are still at the experimental stage, the results are promising and motivated by the improvement of the device's effectiveness and the user's comfort. Like the contraceptive ring, thermal devices are an important avenue to follow since no study has reported any adverse side effect(s) on the hormonal balance of the human body (49). Initial research findings are positive and offer hope for greater contraceptive diversity in men. These efforts should therefore be continued, as general practitioners seem ready to support the democratisation of TTC, based on sound scientific evidence.

THESESOUTENUE PAIR: Wanda VALLET, Fanny TRAVERS

TITLE:

Thermal testicular contraception: a contraceptive method that is still not well known
Descriptive study among general practitioners in Auvergne-Rhone-Alpes by self-administered questionnaire

CONCLUSION :

Today, despite the existence of a large contraceptive basket, the increase in the number of abortions reflects the need to offer new contraceptive solutions to women. In contrast to the large number of contraceptive options for women, the range of contraceptives available for men is still limited. Thermal male contraception (TMC), which was developed some 30 years ago, still suffers from a lack of medical democratisation, which counterbalances the growing interest of men in it. The General practitioners, the main prescribers of contraception, still do not seem to be sufficiently informed to offer this alternative to their patients. We therefore carried out a descriptive study portant sur l'état des lieux des connaissances des medecins generalistes de l'AJRA (Auvergne Rh6ne-Alpes) sm thermal testicular contraception via a self-administered questionnaire sent by email. The analysis of the results WAS carried out using the Jamovi software with the Chi2 test. In the case of the physicians surveyed, the use of additional training related to contraception and the mode of practice (planning or orthogeny centre) were statistically significantly related to their knowledge of ITC. After presenting brief and synthetic information, the majority of the doctors interviewed show that they are not aware of the existence of a problem. n interest in further information and more than half feel ready to offer it to their patents. Male contraception is a motivating topic for many national and international academic trials. international. Even though most of them are still at the experimental stage, the results are promising. In response to increasing patient demand, the med'edns ger:ieralists would be well advised to accompany CTT projects, under the cover of additional information and sound scientific evidence.

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Pr. Patrice MORAND

LE PRÉSIDENT DU JURY


Pr. IMBERT Patrick

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VII. ANNEXES

Annex 1. The questionnaire

Thermal Testicular Contraception PRESENTATION

- Gender
 - woman
 - man
 - other
- Age
 - 25 years - 35 years
 - 36 years - 45 years
 - 46 years - 55 years
 - 56 years - 65 years
 - > 65 years
- Department of practice :
 - Haute-Savoie
 - Savoie
 - Isère
 - Ain
 - Allier
 - Ardèche
 - Drôme
 - Puy de dôme
 - Rhône
 - Cantal
 - Loire
 - Haute-Loire
- Place of practice
 - rural
 - semi-rural
 - urban
- Conditions of exercise
 - MSP
 - Group practice
 - Exercise alone
 - Family planning/orthogeny centre
 - Replacements
- Further training:
 - DU gynaecology
 - DU sexology - couple
 - Orthogenics training
 - not
- Teaching activity (MCQ)
 - University lecturer
 - University lecturer / Associate lecturer / Faculty lecturer
 - Head of Clinic
 - No

PART ONE: General practitioners and contraception

- Do you frequently discuss contraception with your patients?
 - With women?
 - never
 - from time to time
 - on request
 - often
 - systematically
 - With men?
 - never
 - from time to time
 - on request
 - often
 - systematically
 - With couples?
 - never
 - from time to time
 - on request
 - often
 - systematically
- Have you ever been confronted with patients requesting testicular contraception?
 - yes, at least once a week
 - yes, at least once a month
 - yes, at least once a year
 - yes, once during my exercise
 - no, never
- Are you familiar with the thermal testicular contraceptive ring: Androswitch® device?
 - I know it well
 - I have some knowledge of it
 - I've only heard about it
 - not
- Are you familiar with thermal testicular contraception such as underwear: briefs or jockstrap?
 - I know it well
 - I have some knowledge of it
 - I've only heard about it
 - not
- On the same principle as Pearl's index: how effective would you rate testicular thermal contraception (between 0 and 100%)
 - 0 - 20
 - 21 - 40 %
 - 41 - 60 %
 - 61 - 80 %
 - 81 - 100 %
- Do you feel you know enough about the subject?
 - yes, enough to offer it / frame it
 - yes, but not enough to propose/manage it
 - yes, I have some knowledge of it
 - no, I've only vaguely heard of it

- no, not at all
- Would you be interested in further information about testicular contraception?
 - yes, training by professionals
 - yes, through informative brochures
 - yes, through useful websites
 - no, I have enough information
 - no, I don't feel concerned

PART TWO: Representations

- What do you think are the benefits of male thermal contraception that would motivate your patients?
 - non-hormonal
 - easy to use
 - no adverse effects
 - few contraindications
 - reversibility (does not affect fertility)
 - easing the mental burden on the partner about contraception
 - alternative to female contraception
 - empowering the man on the issue of contraception in the couple
- What do you think are the disadvantages of male thermal contraception that might inhibit its use with your patients?
 - discomfort
 - too long wearing time on a daily basis
 - time to effect
 - binding monitoring
 - temporary solution
 - lack of scientific data (effectiveness, long-term adverse effects)
 - apprehension of sexuality disorder (libido/erection/ejaculation)
 - apprehension of non-reversibility (fertility disorder)
 - Lack of patient interest in contraception in the

couple

Male thermal contraception in brief

This method consists of wearing either an undergarment (jockstrap) or a ring (patented Androswitch© device) that holds the testicles up inside the inguinal canals at the root of the penis. This keeps the testicles at a high enough temperature (the 37°C of the human body's interior) to block sperm production. This underwear or ring should be worn for at least 15 hours a day.

Two laboratory sperm analyses (reimbursed) will be carried out: before contraception is started and three months after contraception is started, to check that the number of motile spermatozoa has fallen below 1 million/mL. Contraceptive efficacy is

effective after about three months.

The maximum recommended period of use is four years.

These methods are reversible and comfortable. A person wishing to contract thermally can use the briefs, the ring or both alternately.

There are only a few contraindications to the use of this contraceptive: history of testicular cancer, inguinal hernia*, anomaly of testicular descent*, a stage 3 varicocele and severe obesity with BMI > 35.

**treated or not*



- After reading this report: Do you think that this contraceptive method is interesting enough to offer it to your patients?
 - yes, absolutely
 - yes, why not
 - I don't know
 - no, I still need more information
 - no, I am not convinced
- *In your opinion, could testicular (thermal) contraception be offered as much as female contraceptives in the future?*
 - yes
 - not
- Do you have any comments?

Useful links :

Video of slip/ring installation

<http://www.contraceptionmasculine.fr/>

[BrochureCT-1.pdf \(pointpointpoint.org\)](http://www.pointpointpoint.org/BrochureCT-1.pdf)

<https://remuernoteerde.poivron.org/?cat=7>

<https://www.thoreme.com/>

Annex 2. The email sent to AURA general practitioners

"Dear Sisters and Brothers,

Our names are Wanda and Fanny, and we are currently preparing our thesis in general medicine at the Faculty of Medicine of Grenoble-Alpes University. We are supervised by Doctors BENDAMENE Farouk and BOSMEAN Lucie.

Our subject?

Thermal testicular contraception

Our aim is to find out what you know about it and whether you would be interested in more information on the subject.

Indeed, we have noticed that more and more men want to take an active part in their couple's contraception and are interested in a non-hormonal method.

Unfortunately, too few GPs are trained to date to accompany them in this project.

Could you take 10 minutes of your time to answer our questionnaire? Perhaps this will enable you to offer this solution to some of your patients in the future! Please note that all your personal information will remain anonymous and that you can withdraw at any time.

Also, there are no questions about Covid19, I promise!

<https://enquetes-santeetu.univ-grenoble-alpes.fr/index.php/864959?newtis=Y&lang=en>

You will of course be given feedback at the end of our study! Many

thanks to you
Beautiful day

Wanda VALLET & Fanny TRAVERS

In accordance with the modified law of 6 January 1978 on data processing and liberties (Law n° 78-17 of 6 January 1978 on data processing, files and liberties), the declaration of the study was processed and recorded in the register of the CIL of the University Grenoble-Alpes

Annex 3. The CNIL application form

Header of the form

Date of 1st application		11/05/2020			
Establishment		Faculty of Medicine of Grenoble			
Department - component - laboratory		Department of General Medicine			
Implementation Manager (IM)		BENDAMENE Farouk and BOSMEAN Lucie			
Life cycle of the form <i>(to be filled in by the ad hoc stakeholder)</i>					
version	date	I&L referent (CIL / relayCIL)	referent MOE	state of the card V: Validated EC : In_Progress AV : A_Validate	author version (ref. I&L or MOE)
001	11/05/2021	Y.Gaboreau		A V	1

Plug body

Treatment sheet type	Creation Declaration number (reserved for CIL) Modification / Update modified treatment ref: <input type="checkbox"/> Deletion ref. deleted treatment :	
CNIL formality	<input type="checkbox"/> Exemption DI- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Simplified standard NS- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Single authorization AU- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Single regulatory act RU- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Reserved for CIL

	<input type="checkbox"/> Normal DN <input type="checkbox"/> CNIL notice DAv <input type="checkbox"/> CNIL authorization DAu	Reserved for CIL
Responsibility and purpose		

Data controller	Grenoble Alpes University
Mandatory nature	NO But if you refuse, part of the statistical analysis cannot be carried out
Purpose(s)	To allow a sub-group analysis according to the personal characteristics of the respondents in order to establish, following the questionnaire, a "typical profile" of GPs who are aware of thermal testicular contraception and those who would like to be trained in it The data will therefore be collected to establish this typical profile.
General information about the treatment	
Treatment details	<p><u>Self-administered, online questionnaires.</u> An email with information on the study and its purpose will be sent to the target population via the URPS network, the Auvergne Rhône Alpes medical association, the care network, and knowledge (regional colleges of general practitioners teaching in Auvergne Rhône Alpes). This email contains a link to answer the questionnaire via the Limesurvey software hosted on the UGA's servers, information on the collection of certain non-sensitive personal data and on the possibility to withdraw at any time. (No collection of sensitive data).</p> <p><u>Data processing</u> Questionnaires sent out collecting indirectly identifiable personal data (participants' business email addresses). These will be anonymised when the results are analysed. Process of anonymisation of participants via their e-mail address, keeping only the first three letters of the latter (carried out on Excel-type software, spreadsheet function). Only the two investigators will have access to the recovered data.</p> <p><u>Data storage :</u> Data stored on 2 laptops with secure password access known only to the investigators and changed regularly every 3 months, each password with maximum security (minimum 8 characters with lower case, upper case, number and special character). Backup on 2 hard disks with passwords, in different places, at the investigators' home, under lock and key Limiting car transport to limit theft of PCs or hard drives. No use of public internet networks.</p>

	Extraction of the data collected on a spreadsheet and then statistical analysis using R2web software.
Links with other treatments	No
<u>Desired</u> implementation date	01/07/2021
Recurrence	NO
Duration of operation	1 year
persons concerned	
Category or type	Liberal general practitioners in Auvergne Rhône Alpes

<p>Information given</p>	<p style="text-align: center;">INFORMATION FORM</p> <p>Dear Sir or Madam,</p> <p>We are inviting you to participate in a descriptive study in general practice regarding your knowledge of thermal testicular contraception. The purpose of this newsletter is to inform you about the objectives and process of this study, to ensure that you are not opposed to it.</p> <p>You can take time to read and understand this information, think about your participation, and ask the study leader to explain anything you do not understand.</p> <p>Title of the study: Thermal testicular contraception: a contraceptive method still too little known? Descriptive study of general practitioners in Auvergne-Rhône Alpes by self-administered questionnaire Study under the direction of: Dr BENDAMENE Farouk and Dr BOSMEAN Lucie, coordinating investigators Principal investigator : TRAVERS Fanny and VALLET Wanda Aims of the study: To take stock of the knowledge and representations of general practitioners of thermal testicular contraception.</p> <p>Commitment of the participant : We have developed a questionnaire on the Limesurvey software. It is up to you as a GP to answer it and you can stop at any time. Agreeing to be included in this study means agreeing to have your available data collected and analysed anonymously. The data collected will not identify you, your</p>
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anonymity will be preserved.
At no time will we contact you directly.

Commitment of the principal investigator: As principal investigator, he/she undertakes to conduct this research in accordance with ethical and deontological provisions, to protect the physical, psychological and social integrity of individuals throughout the research and to ensure the confidentiality of the information collected. The data collected will be stored and analysed on the R2web software.

Freedom of the participant: Your consent to continue the research may be withdrawn at any time without giving any reason and without incurring any liability or consequences.

Participant information: You have the opportunity to obtain additional information about this study from the principal investigator, within the constraints of the research design. There are no foreseeable risks associated with this study.

Confidentiality of information : In the context of this study, your personal data will be processed. Your data will only be used to meet the objectives of the research. The processing of your data will be carried out by the two investigators using the R2web software. Indirectly identifiable personal data will be anonymised at the time of the results. Your e-mail address will not be shared with any external third parties, and you will not receive any solicitations by e-mail. Anonymised data can be sent to :

- the scientific leader (thesis directors) of the research
- persons responsible for regulatory affairs and for registering the research with the competent authorities - staff of health authorities and legally authorised public control authorities, in the context of a specific mission or the exercise of a right of communication
- independent experts to re-analyse the data to verify the results of the research

In any event, all parties involved in this research are required to respect the confidentiality of your personal data. The sponsor will keep your data for up to five years after the last
They will be archived for twenty years afterwards. The data will be made available to the public through the publication of the results of the research or, in the absence of publication, until the final report of the research is signed. They will then be archived for a period of twenty years.

Legislation: In accordance with the provisions of the law of 6 January 1978 relating to data processing, files and freedoms, amended by the law of 20 June 2018 relating to the protection of personal data and the General Data Protection Regulation (RGPD) of 14 April 2016 applicable since 25 May 2018:

	<p>- you have a right of access, rectification and the right to request the limitation of processing - you also have a right to object to the transmission of data covered by professional secrecy that may be used in the context of this</p>		
	<p>research and be treated.</p> <p>- you have a right to erasure and to be forgotten. However, in accordance with Articles 17.3.c and 17.3.d of the GDPR, this right does not apply insofar as the processing of the data is necessary for statistical purposes and may make it impossible or seriously compromise the achievement of the purposes of the said processing. In such cases, in order not to jeopardise the results of the study, we will therefore retain your data.</p> <p>- you have the right to complain to a supervisory authority (in France: the Commission Nationale de l'Informatique et des Libertés)</p> <p>To exercise these rights, please contact the study managers at farouk.bendamene@univ-grenoble-alpes.fr or lucie.bosmean@univ-grenoble-alpes.fr.</p> <p>The Data Protection Officer (DPO) of the Université Grenoble Alpes was asked to ensure that the study complied with the CNIL MR-004 standard.</p> <p>We thank you in advance for your participation, and we can be reached by e-mail to answer any questions you may have.</p> <p style="text-align: right;">Investigators Managers</p> <p style="text-align: right;">TRAVERS Fanny BENDAMENE Farouk BOSMEAN Lucie</p> <p>VALLET Wanda</p>		
exercise of rights	<p>To exercise these rights, please contact the study managers at farouk.bendamene@univ-grenoble-alpes.fr or lucie.bosmean@univ-grenoble-alpes.fr.</p>		
Data processed			
Data or categories	Origin / source	Shelf life	Recipients

Personal socio-demographic data (gender, age range, commune of exercise)	Respondent	The data will be kept until the final research report is written and then archived for 15 years	2 investigators and 2 thesis leaders
Non-personal data (sex life and health data)	Enclosed	The data will be kept until the final research report is written and then archived for 15 years	2 investigators and 2 thesis leaders

Transfer of data outside the EU	NO
Security	
Data security	<p>Data stored locally on 2 laptops (HP brand) located in 2 different locations, each protected by passwords changed regularly every 3 months, complex passwords known only to each interviewer respectively.</p> <p>Regular transfers also to 2 password-protected backup hard drives dedicated to the research work, in 2 different locations and separate from the laptops, under lock and key. Data will be encrypted on the hard drive of one of the investigators via Veracrypt.</p> <p>Anti-virus system on both computers (Avast) No use of public internet networks.</p>
Privacy	<p>Secure access.</p> <p>Confidentiality clause signed by the 2 investigators Data collected anonymously at the base</p> <p>Data with right of access and modification by the respondent</p>
Implementation	
Responsible for implementation	BENDAMENE Farouk and BOSMEAN Lucie

persons or services responsible for implementation	Travers Fanny and Vallet Wanda
Means of implementation	Human resources: development of the survey and data collection by the head of the project management team (Fanny TRAVERS and Wanda VALLET) Material resources: computer with spreadsheet and statistical analysis software. Questionnaire created by LimeSurvey and hosted by the Faculty of Medicine of Grenoble
Subcontracting	No

Remarks - Observations
Additional information

Annex 4. The information sheet

INFORMATION FORM

"Madam, Sir,

We are offering you the opportunity to participate in a descriptive study in general practice about your knowledge of thermal testicular contraception. The purpose of this newsletter is to inform you about the aims and process of this study, to ensure that you are not opposed to it.

You can take time to read and understand this information, think about your participation, and ask the study leader to explain anything you do not understand.

Title of the study: Thermal testicular contraception: a contraceptive method still too little known?

Descriptive study of general practitioners in Auvergne-Rhône Alpes by self-administered questionnaire.

Study under the direction of: Dr BENDAMENE Farouk and Dr BOSMEAN Lucie, coordinating investigators

Principal investigator : TRAVERS Fanny and VALLET Wanda

Aims of the study: To take stock of knowledge and

General practitioners' representations of thermal testicular contraception.

Commitment of the participant :

We have developed a questionnaire on the Limesurvey software. It is up to you as a GP to answer it and you can stop at any time.

Agreeing to be included in this study means agreeing to have your available data collected and analysed anonymously. The data collected will not identify you, your anonymity will be preserved. At no time will we contact you directly.

Commitment of the principal investigator: As principal investigator, he/she undertakes to conduct this research in accordance with ethical and deontological provisions, to protect the physical, psychological and social integrity of individuals throughout the research and to ensure the confidentiality of the information collected. The data collected will be stored and analysed on the R2web software.

Freedom of the participant: Your consent to continue the research may be withdrawn at any time without giving any reason and without incurring any liability or consequences.

Participant information: You have the opportunity to obtain additional information about this study from the principal investigator, within the constraints of the research design. There are no foreseeable risks associated with this study.

Confidentiality of information : In the context of this study, your personal data will be processed. Your data will only be used to meet the objectives of the research. The processing of your data will be carried out by the two investigators using the R2web software. Indirectly identifiable personal data will be anonymised at the time of the results. Your e-mail address will not be shared with any external third parties, and you will not receive any e-mail solicitations.

Anonymised data can be sent to :

- the person responsible for regulatory affairs and the registration of the research with the competent authorities
- staff of legally authorised health authorities and public control authorities, in the context of a specific mission or the exercise of a right of communication
- independent experts to re-analyse the data to verify the results of the research

In any case, all parties involved in this research are required to respect the confidentiality of your personal data. The sponsor will keep your data for up to five years after the last publication of the research results or, if not published, until the final research report is signed. It will then be archived for a period of twenty years.

Legislation: In accordance with the provisions of the law of 6 January 1978 relating to data processing, files and freedoms, amended by the law of 20 June 2018 relating to the protection of personal data and the General Data Protection Regulation (RGPD) of 14 April 2016 applicable since 25 May 2018:

- you have a right of access, rectification as well as the right to request the limitation of processing.
- You also have the right to object to the transmission of data covered by professional secrecy that may be used in the context of this research and processed.
- However, in accordance with Articles 17.3.c and 17.3.d of the GDPR, this right does not apply insofar as the processing of the data is necessary for statistical purposes and may make it impossible or seriously compromise the achievement of the objectives of the said processing. In such cases, in order not to jeopardise the results of the study, we will therefore retain your data.
- you have the right to complain to a supervisory authority (in France: the Commission Nationale de l'Informatique et des Libertés)

To exercise these rights, please contact the study managers at farouk.bendamene@univ-grenoble-alpes.fr or lucie.bosmean@univ-grenoble-alpes.fr.

The Data Protection Officer (DPO) of the Université Grenoble Alpes was asked to ensure that the study complied with the CNIL MR-004 standard.

We thank you in advance for your participation, and we can be reached by e-mail to answer any questions you may have.

The investigators The persons in charge TRAVERS Fanny
BENDAMENE Farouk VALLET Wanda BOSMEAN Lucie

Annex 5. Confidentiality clause TRAVERS Fanny

CONFIDENTIALITY CLAUSE FOR PERSONS HANDLING PERSONAL DATA :

I, the undersigned Mrs. TRAVERS Fanny, working as a medical intern for the company CHU Grenoble-Alpes (hereinafter referred to as "the Company"), and as such having access to personal data, declare that I recognise the confidentiality of said data.

I therefore undertake, in accordance with Articles 34 and 35 of the amended Act of 6 January 1978 on Data Processing, Data Files and Individual Liberties and Articles 32 to 35 of the General Data Protection Regulation of 27 April 2016, to take all precautions in accordance with customary practice and the state of the art within the framework of my duties in order to protect the confidentiality of the information to which I have access, and in particular to prevent it from being communicated to persons not expressly authorised to receive such information.

In particular, I undertake to :

- not to use the data to which I have access for purposes other than those for which I am responsible;
- not to disclose such data to any person other than those duly authorised, by virtue of their functions, to receive such data, whether private, public, natural or legal persons; - not to make any copy of such data except as necessary for the performance of my duties; - to take all measures in accordance with custom and the state of the art within the framework of my duties in order to prevent the misuse or fraudulent use of such data;
- take all precautions in accordance with custom and the state of the art to preserve the physical and logical security of this data;
- ensure, within the limits of my powers, that only secure means of communication are used to transfer such data;
- in the event of my ceasing to hold office, to return all data, computer files and any information support relating to these data.

This undertaking of confidentiality, which is in force throughout my term of office, will remain in force, without any time limit, after the termination of my term of office, whatever the cause, insofar as this undertaking concerns the use and communication of personal data. I have been informed that any violation of this undertaking will expose me to disciplinary and criminal sanctions in accordance with the regulations in force, in particular with regard to Articles 226-16 to 226-24 of the Criminal Code.

Done in Grenoble, on 01/06/2021

Name: TRAVERS Fanny

Annex 6. Confidentiality clause VALLET Wanda

CONFIDENTIALITY CLAUSE FOR PERSONS HANDLING PERSONAL DATA :

I, the undersigned Mrs VALLET Wanda, working as a medical intern for the company CHU Grenoble-Alpes (hereinafter referred to as "the Company"), and as such having access to personal data, declare that I recognise the confidentiality of said data.

I therefore undertake, in accordance with Articles 34 and 35 of the amended Act of 6 January 1978 on Data Processing, Data Files and Individual Liberties and Articles 32 to 35 of the General Data Protection Regulation of 27 April 2016, to take all precautions in accordance with customary practice and the state of the art within the framework of my duties in order to protect the confidentiality of the information to which I have access and, in particular, to prevent it from being communicated to persons not expressly authorised to receive such information.

In particular, I undertake to :

- not to use the data to which I have access for purposes other than those for which I am responsible;
- not to disclose such data to any person other than those duly authorised, by virtue of their functions, to receive such data, whether private, public, natural or legal persons; - not to make any copy of such data except as necessary for the performance of my duties; - to take all measures in accordance with custom and the state of the art within the framework of my duties in order to prevent the misuse or fraudulent use of such data;
- take all precautions in accordance with custom and the state of the art to preserve the physical and logical security of this data;
- ensure, within the limits of my powers, that only secure means of communication are used to transfer such data;
- in the event of my ceasing to hold office, to return all data, computer files and any information support relating to these data.

This undertaking of confidentiality, which is in force throughout my term of office, will remain in force, without any time limit, after the termination of my term of office, whatever the cause, insofar as this undertaking concerns the use and communication of personal data. I have been informed that any violation of this undertaking will expose me to disciplinary and criminal sanctions in accordance with the regulations in force, in particular with regard to Articles 226-16 to 226-24 of the Criminal Code.

Done in Grenoble, on 01/06/2021

Name: VALLET Wanda

Annex 7. Commitment form BOSMEAN Lucie

Commitment to comply with a CNIL reference methodology for a processing operation carried out in the context of a general medicine thesis

1. Information on the registrant

Data controller: Université Grenoble Alpes (UGA) Data

Protection Officer (DPO)

DPO@univ-grenoble-alpes.fr

Unit responsible for implementation: UFR de médecine

Department of General Medicine (DMG)

Pôle santé, domaine de la Merci, place du Commandant Nal,

38700 La Tronche

doyen.medecine@univ-grenoble-alpes.fr

DMG business referent: Dr Yoann Gaboreau

yoann.gaboreau@univ-grenoble-alpes.fr

2. Information on the treatment used for the thesis

Purpose (short title) :

Thermal testicular contraception: a contraceptive method still too little known?

Descriptive study of general practitioners in Auvergne-Rhône Alpes by self-administered questionnaire.

Principal investigator (PhD student) :

Fanny Travers and Wanda Vallet

Does the treatment fall within the scope of a reference methodology? (1 choice)

☐ MR-003 Research involving humans in the field of health not requiring consent* from the person concerned

☒ MR-004 Research not involving humans, studies and evaluations in the field of health

☐ The treatment is not part of a reference methodology

3. Data transfers outside the EU

☒ NO

☐ YES (consult the list of countries offering an adequate level of protection and justify to the DPO)

4. Commitment of the implementer (thesis director)

Identity and quality

Lucie BOSMEAN, Head of University Medicine Clinic (UGA)

Contact e-mail: lucie.bosmean@univ-grenoble-alpes.fr

Date: 24/06/2021

Signature

Warning

The personal data in this form are necessary for the validity of this document and may be communicated to the data controller - or its representative - and to the CNIL in case of verification. In accordance with the General Data Protection Regulation (RGPD), you may exercise your rights with regard to the data concerning you by contacting the UGA's Data Protection Officer DPO@univ-grenoble-alpes.fr

Annex 8. Commitment form BENDAMENE Farouk

Commitment to comply with a CNIL reference methodology for a processing operation implemented in the context of a general medicine thesis (document to be sent to the DPO with the file to be examined)

1. Information on the registrant

Data controller University : Grenoble Alpes (UGA) Data

Protection Officer (DPO)

DPO@univ-grenoble-alpes.fr

Unit responsible for implementation: UFR de médecine

Department of General Medicine (DMG)

Pôle santé, domaine de la Merci, place du Commandant Nal,
38700 La Tronche

doyen.medecine@univ-grenoble-alpes.fr

DMG business contact: Dr Yoann Gaboreau

yoann.gaboreau@univ-grenoble-alpes.fr

2. Information on the treatment used for the thesis

Purpose (short title) :

Thermal testicular contraception: a contraceptive method still too little known?
Descriptive study of general practitioners in Auvergne-Rhône Alpes by self-administered questionnaire.

Principal investigator (PhD student) :

Fanny Travers and Wanda Vallet

Does the treatment fall within the scope of a reference methodology? (1 choice)

☐ MR-003 Research involving humans in the field of health not requiring consent* from the person concerned

☒ MR-004 Research not involving humans, studies and evaluations in the field of health

☐ The treatment is not part of a reference methodology

3. Data transfers outside the EU

☒ NO

☐ YES (consult the list of countries offering an adequate level of protection and justify to the DPO)

4. Commitment of the implementer (thesis director)

Identity and quality

Farouk BENDAMENE, University Chief of Clinic in General Medicine
(UGA) Contact e-mail: farouk.bendamene@univ-grenoble-alpes.fr

Date: 24/06/2021

Signature

Warning

The personal data in this form are necessary for the validity of this document and may be communicated to the person responsible for processing - or his representative - and to the CNIL in the event of verification. In accordance with the General Data Protection Regulation (RGPD), you may exercise your rights with regard to the data concerning you by contacting the UGA's Data Protection Officer DPO@univ-grenoble-alpes.fr

Annex 9. Table confronting the CTT

Avez vous déjà été confronté à une demande de CTT ?		Non jamais	oui, au moins une fois au cours de mon exercice	oui, au moins une fois par an	oui, au moins une fois par an	oui, au moins une fois par semaine	Total	Chi2 p-value	Fischer exact p-value
Sexe	Féminin	68	17	17	7	2	111	0,217	0,255
	Masculin	20	8	12	1	0	41		
	Total	88	25	29	8	2	152		
Age	25 ans - 35 ans	44	13	8	3	0	68	0,043	NaN
	36 ans - 45 ans	21	5	14	3	0	43		
	46 ans - 55 ans	12	4	3	2	2	23		
	56 ans - 65 ans	10	3	3	0	0	16		
	Total	87	25	28	8	2	150		
Département(s) d'exercice	Haute Loire	10	4	2	0	0	16	0,002	NaN
	Haute Savoie	55	16	19	3	0	93		
	Isere	19	5	8	2	2	36		
	Savoie	4	0	0	3	0	7		
	Total	88	25	29	8	2	152		
Lieu d'exercice	Rural	10	5	5	1	0	21	0,397	0,394
	Semi-rural	48	15	13	3	0	79		
	Urbain	30	5	11	4	2	52		
	Total	88	25	29	8	2	152		
Mode(s) d'exercice	Cabinet de groupe	56	10	18	5	0	89	< 0,001	NaN
	Exercice seul	6	5	3	0	0	14		
	Maison de sante pluridisciplinaire	27	8	7	2	0	44		
	Planning familial centre d'orthogénie	2	0	4	3	2	11		
	Remplacement	3	1	1	0	0	5		
	Total	94	24	33	10	2	163		
Formation(s) complémentaire(s)	DU gynécologie	11	2	9	3	2	27	< 0,001	NaN
	Formation orthogénie	6	1	5	4	2	18		
	Non	73	22	19	3	0	117		
	Total	90	25	33	10	4	162		
Activité(s) d'enseignement	Maitre de stage des universités	35	6	14	3	2	61	0,163	0,163
	Non	52	19	15	5	0	91		
	Total	87	25	29	8	2	151		

Appendix 10: Sense of personal capability table

Vous sentez assez renseigné sur la CTT ?		Non pas du tout	non, j'en ai seulement entendu parler	oui, j'en ai quelques notions	oui, mais insuffisamment pour la proposer/ l'encadrer	oui, suffisamment pour la proposer/ l'encadrer	Total	Chi2 p-value	Fischer exact p-value
Sexe	Féminin	56 (50.9%)	34 (30.9%)	5 (4.5%)	7 (6.4%)	8 (7.3%)	110	0.872	0.923
	Masculin	19 (50.0%)	14 (36.8%)	2 (5.3%)	1 (2.6%)	2 (5.3%)	38		
	Total	75	48	7	8	10	148		
Age	25 ans - 35 ans	25 (37.3%)	29 (43.3%)	4 (6.0%)	5 (7.5%)	4 (6.0%)	67	0.089	NaN
	36 ans - 45 ans	29 (67.4%)	7 (16.3%)	2 (4.7%)	2 (4.7%)	3 (7.0%)	43		
	46 ans - 55 ans	14 (60.9%)	5 (21.7%)	0 (0.0%)	1 (4.3%)	3 (13.0%)	23		
	56 ans - 65 ans	7 (50.0%)	7 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	14		
	Total	75	48	6	8	10	147		
Département(s) d'exercice	Haute Loire	9 (60.0%)	5 (33.3%)	0 (0.0%)	1 (6.7%)	0 (0.0%)	15	0.378	0.363
	Haute Savoie	49 (54.4%)	29 (32.2%)	5 (5.6%)	3 (3.3%)	4 (4.4%)	90		
	Isere	15 (41.7%)	10 (27.8%)	2 (5.6%)	4 (11.1%)	5 (13.9%)	36		
	Savoie	2 (28.6%)	4 (57.1%)	0 (0.0%)	0 (0.0%)	1 (14.3%)	7		
	Total	75	48	7	8	10	148		
Lieu d'exercice	Rural	10 (47.6%)	9 (42.9%)	0 (0.0%)	1 (4.8%)	1 (4.8%)	21	0.051	0.050
	Semi-rural	41 (54.7%)	27 (36.0%)	4 (5.3%)	1 (1.3%)	2 (2.7%)	75		
	Urbain	24 (46.2%)	12 (23.1%)	3 (5.8%)	6 (11.5%)	7 (13.5%)	52		
	Total	75	48	7	8	10	148		
Mode(s) d'exercice	Cabinet de groupe	42 (48.8%)	32 (37.2%)	5 (5.2%)	3 (3.5%)	4 (4.7%)	86	< 0.001	NaN
	Exercice seul	8 (61.5%)	5 (38.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	13		
	Maison de sante pluridisciplinaire	25 (56.8%)	11 (25.0%)	1 (2.3%)	4 (9.1%)	3 (6.8%)	44		
	Planning familial centre d'orthogenie	0 (0.0%)	2 (18.2%)	1 (9.1%)	2 (18.2%)	6 (54.5%)	11		
	Remplacement	1 (20.0%)	2 (40.0%)	1 (20.0%)	1 (20.0%)	0 (0.0%)	5		
	Total	76	52	8	10	13	159		
Formation(s) complémentaire(s)	DU gynecologie	7 (25.9%)	10 (37.0%)	2 (7.4%)	2 (7.4%)	6 (32.2%)	27	<0.001	NaN
	Formation orthogenie	3 (16.7%)	5 (27.8%)	0 (0.0%)	3 (16.7%)	7 (38.9%)	18		
	Non	67 (59.3%)	35 (31.0%)	5 (4.4%)	4 (3.5%)	2 (1.8%)	113		
	Total	77	50	7	9	15	158		
Activité(s) d'enseignement	Maitre de stage des universites	35 (59.3%)	12 (20.3%)	2 (3.4%)	4 (6.8%)	6 (10.2%)	59	0.067	0.054
	Non	40 (45.5%)	36 (40.9%)	5 (5.7%)	3 (3.4%)	4 (4.5%)	88		
	Total	75	48	7	7	10	147		

Appendix 11: Example of a contingency table from Jamovi software (feeling of personal capacity and department of exercise)

Contingency Tables

vous_sentez_vous_assez_renseigne_sur_le_sujet		departement_s_dexercice				Total
		haute_loire	haute_savoie	isere	savoie	
Non, pas du tout	Observed	9	49	15	2	75
	Expected	7.601	45.61	18.24	3.547	75.00
	% within column	60.0 %	54.4 %	41.7 %	28.6 %	50.7 %
Non, j'en ai seulement entendu parler	Observed	5	29	10	4	48
	Expected	4.865	29.19	11.68	2.270	48.00
	% within column	33.3 %	32.2 %	27.8 %	57.1 %	32.4 %
Oui, j'en ai quelques notions	Observed	0	5	2	0	7
	Expected	0.709	4.26	1.70	0.331	7.00
	% within column	0.0 %	5.6 %	5.6 %	0.0 %	4.7 %
Oui, mais insuffisamment pour la proposer / l'encadrer	Observed	1	3	4	0	8
	Expected	0.811	4.86	1.95	0.378	8.00
	% within column	6.7 %	3.3 %	11.1 %	0.0 %	5.4 %
Oui, suffisamment pour la proposer / l'encadrer	Observed	0	4	5	1	10
	Expected	1.014	6.08	2.43	0.473	10.00
	% within column	0.0 %	4.4 %	13.9 %	14.3 %	6.8 %
Total	Observed	15	90	36	7	148
	Expected	15.000	90.00	36.00	7.000	148.00
	% within column	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %

χ^2 Tests

	Value	df	p
χ^2	12.9	12	0.378
Fisher's exact test			0.363
N	148		

*L*e serment d'Hippocrate

Texte revu par l'Ordre des médecins en 2012

“ Au moment d’être admis(e) à exercer la médecine, je promets et je jure d’être fidèle aux lois de l’honneur et de la probité.

Mon premier souci sera de rétablir, de préserver ou de promouvoir la santé dans tous ses éléments, physiques et mentaux, individuels et sociaux.

Je respecterai toutes les personnes, leur autonomie et leur volonté, sans aucune discrimination selon leur état ou leurs convictions. J'interviendrai pour les protéger si elles sont affaiblies, vulnérables ou menacées dans leur intégrité ou leur dignité. Même sous la contrainte, je ne ferai pas usage de mes connaissances contre les lois de l'humanité.

J'informerai les patients des décisions envisagées, de leurs raisons et de leurs conséquences.

Je ne tromperai jamais leur confiance et n'exploiterai pas le pouvoir hérité des circonstances pour forcer les consciences.

Je donnerai mes soins à l'indigent et à quiconque me les demandera. Je ne me laisserai pas influencer par la soif du gain ou la recherche de la gloire.

Admis(e) dans l'intimité des personnes, je tairai les secrets qui me seront confiés. Reçu(e) à l'intérieur des maisons, je respecterai les secrets des foyers et ma conduite ne servira pas à corrompre les mœurs.

Je ferai tout pour soulager les souffrances. Je ne prolongerai pas abusivement les agonies. Je ne provoquerai jamais la mort délibérément.

Je préserverai l'indépendance nécessaire à l'accomplissement de ma mission. Je n'entreprendrai rien qui dépasse mes compétences. Je les entretiendrai et les perfectionnerai pour assurer au mieux les services qui me seront demandés.

J'apporterai mon aide à mes confrères ainsi qu'à leurs familles dans l'adversité. Que les hommes et mes confrères m'accordent leur estime si je suis fidèle à mes promesses ; que je sois déshonoré(e) et méprisé(e) si j'y manque.

”