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# Which positive factors determine the choice of a career in General Practice for medical students and trainees ? A systematic literature review

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**Which positive factors determine the choice of a career in General Practice for medical students and trainees? A systematic literature review.**

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**Quels facteurs positifs déterminent le choix d'une carrière en médecine générale pour les étudiants en médecine et les jeunes médecins ? Une revue systématique de la littérature.**

## Résumé

**Contexte :** De nombreuses études ont porté sur les aspects négatifs de la médecine générale. Les chercheurs du réseau européen de recherche sur la médecine générale (EGPRN) sont parmi les rares à avoir montré à quel point le rôle d'un généraliste pourrait être attrayant. L'objectif de cette étude européenne portant sur huit pays était de déterminer les facteurs susceptibles d'attirer et de retenir les étudiants et les jeunes médecins en médecine générale.

**Méthode :** Revue systématique de la littérature issue des bases de données Pubmed, Embase et Cochrane publiée du 01/01/2000 au 31/12/2018 par deux chercheurs travaillant à l'aveugle conformément aux recommandations de PRISMA et à une analyse qualitative. La recherche spécifique à la base de données a été conduite avec des équations comprenant les mots clés « Médecine Générale », « Médecins généralistes », « Choix de carrière » et « Satisfaction au travail ».

**Résultats :** 24 articles sur 414 ont été sélectionnés. Selon la littérature, les facteurs de satisfaction peuvent être classés en quatre thèmes et quinze sous-thèmes. Les plus fréquemment rencontrés sont les suivants : enseignement de la médecine générale, liberté de travail et d'organisation, qualité de vie, diversité des pratiques, équilibre de la charge de travail et revenus. Cette analyse a également mis en évidence des facteurs de satisfaction professionnelle des médecins, tels que la stimulation intellectuelle et la relation établie avec les patients et d'autres professionnels.

**Conclusion :** la littérature sur l'appel des étudiants à la médecine générale a mis en évidence de nombreux facteurs positifs. Tout article fournit une vue globale d'un étudiant et d'un jeune médecin attiré par la médecine générale. Néanmoins, Les cours et les stages en médecine générale avec des modèles positifs jouent un rôle déterminant dans le choix de carrière et devraient être intégrés au cœur de l'enseignement des facultés de médecine.

# **Which positive factors determine the choice of a career in General Practice for medical students and trainees? A systematic literature review.**

## **Abstract**

Background: Many studies focused on the negative aspects of General Practice. Researchers from the EGPRN (European General Practice Research Network) are some of the few who have shown how the role of a GP could be appealing. The aim of this eight-country European study was to determine which factors could attract and retain students and trainees into General Practice.

Method: Systematic review of literature from Pubmed, Embase and Cochrane databases issued from 01/01/2000 to 12/31/2018 by two researchers working blind according to the PRISMA guidelines including a qualitative analysis. The database-specific search was conducted with equations including « Family Practice », « General practitioners », « Career choice » and « Job satisfaction » keywords.

Results: 24 articles out of 414 were selected. According to literature, satisfaction factors can be classified into four themes and fifteen subthemes. The most frequently found are: the teaching of General Practice, workplace and organization freedom, quality of life, variety in practice, workload balance and income. This analysis also highlighted factors of physicians' job satisfaction, such as intellectual stimulation and the relationship built with patients and other professionals.

Conclusion: Literature on the appeal of students to General Practice found a lot of positive factors. Any article provides a global view of a student and trainee attracted to General Practice. Nevertheless, articles as a whole design one. Courses and clerkships in General Practice with positive role models are determinant for career choice and should be integrated as a core of medical schools teaching.

## **MeSH Terms**

Adult; Career Choice; Career Mobility; Family Practice; General Practitioners; Health care system; Humans; Job Satisfaction; Physician; Primary health care.

## Background

The Organization for Economic Cooperation and Development (OECD) countries are facing a shortage of general practitioners (GPs) because of declining physician population and disinterest of students for this specialty. The World Health Organization (WHO) also emphasized on the central role of General Practice, especially in the different European health care systems [1]. The European commission estimate that the demand for healthcare is increasing as the population ages but the number of physicians is decreasing. In 2009, 30 per cent of all European medical doctors were over 55 years old and by 2020 over 60.000 (3,2 per cent) doctors will retire annually. Consequently, by 2020, all Europe will face a shortage of 230.000 physicians [1]. The Association of American Medical Colleges (AAMC) estimates that by 2020, the United States will face a shortage of 45.000 primary care physicians<sup>4</sup>. The National Health System (NHS) believes that the shortage of GPs in the United Kingdom will be about 16.000 in 2021. This estimation is corroborated by the Royal College of General Practitioners [2].

The WONCA definition of General Practice stressed the role and the competencies of primary care to ensure quality of care for the whole population [3][4].

The OECD countries tried different strategies to increase the numbers of GPs because of the looming GPs shortage and they were unsuccessful. A lot of research focused on the negative aspects of the profession. They highlighted the reasons why doctors are leaving clinical practice [5][6][7]. Primary care seems less important than other specialties. Future income is also an important factor. In the USA medical students who borrow money for their studies will not choose to become a GP in fear of not earning enough to cover their debt [8]. Large administrative obligations and the short-duration, high-volume patient visits required to remain financially stable makes general practice an undesirable practice model and a bureaucratic burden. Nevertheless, some medical students and trainees choose the path of general practice and are attracted by this specialty. Through the literature, few studies pointed out all the satisfaction factors that a GP find in his work that will prompt him to stay as a family doctor.

EGPRN brought together an eight-country research group to consider General Practice on its positive aspects. This research group was named Womanpower. [9].

The aim of this research was to determine which factors could attract students and trainees into general practice within scientific medical literature.

# Method

## ***Search strategy***

The search strategy used to select articles of interest was based on a systematic literature review following the Preferred Reporting Items for Systematic reviews and Meta-Analysis statement (PRISMA)[10][11] (Table 1 - Annexes).

Relevant studies were identified by a systematic research in the databases Pubmed and Embase. The time interval selected for the bibliography screening was from January 1 2000 to December 31 2018. The target population of the literature review was the students in medicine and trainees.

The database-specific search included the following equitation for Pubmed: (("Family Practice"[Majr] OR "General Practitioners"[Majr] OR "Physicians, Family"[Majr]) AND ("Career Choice"[Majr] OR "Career Mobility"[Majr])) AND hasabstract[text] AND ("2000/01/01"[PDAT] : "2018/12/31"[PDAT]) and (("Family Practice"[Majr] OR "General Practitioners"[Majr]) OR "Physicians, Family"[Majr]) AND "Job satisfaction"[Majr] AND hasabstract[text] AND ("2000/01/01"[PDAT] : "2018/12/31"[PDAT]).

“Job satisfaction”, “career choice” and “career mobility” were chosen by the research team because it was the best possible MESH term to describe positive factors at work. The use of a MESH term was efficient, because it included all possible synonyms.

## ***Inclusion and exclusion criteria***

The inclusion criteria were:

- The study has been conducted in primary care
- The study was on career perspectives
- The study described the working conditions in primary care
- The study described incentives to improve working conditions in primary care
- The study described the medical education for general practice (vocational training, lectures...)

The exclusion criteria were:

- 01- The study was conducted in Africa, Asia, South America
- 02- The research was about specific populations
- 03- Specialists or specific doctors
- 04- Nurses and no doctors
- 05- The research was about patient's satisfaction

- 06- The article has no abstract available or was an editorial or a protocol without result
- 07- Research on negative topics about general practice
- 08- The study was irrelevant for the research question
- 09- Only GP setting
- 10- The language was out of the team
- 11- Literature review
- 12- Article no found: the research team was unable to find the article

All documents were analyzed for identification, screening and inclusion by two separate researchers using inclusion and exclusion criteria. To be included, the article had to score “yes” on every question. This quality appraisal form was adapted from the quality appraisal form of the CASP [12, 13].

**Table 1 : Quality appraisal**

Did this article give an answer to the research question?
Did the article focus clearly on the research question?
Was the methodology appropriate?
Was the recruitment appropriate?
Do you believe the results?

For all identified articles, the following information was extracted: title, authors, year, journal, language, country, research question, research type, method, detailed method and setting.

The data extraction and analysis were based on a phenomenological approach used in qualitative studies [14]. For the articles included, the two researchers independently coded verbatim data: Open codes, sub themes and themes. Open coding requires reading through data several times and creating labels for data cluster that summarize the essence of those clusters. Axial coding identifies the relationships or central tenets among the open codes. Selective coding consisted in choosing the theme that includes all of the data of one variable core identified from one or few sub themes, constantly comparing the themes to avoid redundancy. all of the data of one variable core identified from one or few sub themes, constantly comparing the themes to avoid redundancy.

## Results

The research found 414 articles after removing duplicates. A lot of studies had research question on a specific problem in general practice, but not exactly on job satisfaction or career choice.

Finally, 24 articles were selected for the study. The full process is described in the PRISMA flow chart on figure 1.

23 of the included studies were published in English language. One article was published in German. The results of this study were analyzed by the German team. Table 2 gives an overview of the studies included in the review [15–37].

### ***Data analysis***

The verbatim coding of the included articles led to 196 open codes. The axial coding clustered 14 axial codes, which were classified into 4 major themes.

An overview of the results from the articles analysis is provided on table 2.

### ***General profession related themes***

The first major theme was related to every profession.

The topic of workload and income was widely discussed in selected articles. This theme was mentioned in 17 of the 24 studied articles. Medical students seemed worried by the heavy workload. This theme is expressed by the desire to choose the workload. Some men or women wanted to work part-time [16, 17]. Workload should be satisfying for student, but should be a subject of dissatisfaction when it is negative. Meli et Al found that the total GP satisfaction score was negatively correlated with actual hours per week [21].

Responsibilities and professional recognition for work quality [30][33].

Reasonable activity is sought to suit the family life [28] and had time for leisurely activities [37]. Young GPs also favored a fair income [36] and value the job security [22]. They liked the professional recognition [32] that goes with the job, may it come from family, patients or the medias [38]. Additionally, they enjoyed the bio psychosocial focus of healthcare and the high responsibilities involved [31].

The second major theme united codes specific to the GPs:

The effective medical management of patients

Having an fair management of care was a positive factor. Petek Šter found that students appreciated a long-term physician–patient relationship, which enables patient-centered care, taking into account prevention and treatment of physical and psychosocial problems [39].

Freedom for workplace and work organization was the most studied theme. 20 articles spoke on this subject which is very sensitive. [22][24]. Furthermore, students and trainees liked the freedom to organize their working hours and their lifestyle working method [30]. They liked to have autonomy [28, 37] and less hospital orientation [29]. Dedication and commitment individual are important characteristics to be a GP [24]. Practice in general practice can be viewed positively if there is freedom to organize the work. The literature found that students and trainees liked the lifestyle advantages of the profession [31]. With the possibility of flexible hours [30], they could manage their schedule. Working conditions are an important determinant of satisfaction if they are chosen [20][22][24].

The individual characteristic to be a GP [24, 27, 28]. There was a remarkable picture of student who wanted to become a GP. Those students were aware of the ethical concept of equity and know the rules of the health care system. The student who choose to become a GP was both socially oriented [39].

The intellectual stimulation was one of the most described in the literature. It should be surprising because general practice was often described as a less technical specialty. GPs competently manage a broad scope of practice [15]. Specific competencies are useful to practice [40].

The doctor-patient relationship was studied by number of researches [24, 28]. The patient is for the GP in the center of the care. The long-term doctor-patient relationships was on importance [18].

The relationship with other professionals is on importance for the students. Laurence et Al highlighted that young GPs wished to work in a practice with a friendly atmosphere, good business structure. They wished support from senior GPs and the proximity to a hospital or technical environment [27]. The relations with other professionals are both friendly and supportive.

The variety in practices, [35] Students and trainees liked to take care of patients of all ages [33] and backgrounds and to give medical attention to all kinds of health issues even the most common ones across lifespan of a patient [34]. They enjoyed preventive medicine [22, 24, 37] and family focused medicine [24]. They are also big on being the patient's primary care physician and being the one who coordinates with the hospital or specialists [31]. Students and trainees appreciated the wide range of patients [24], broad scope of practice [24, 33, 35] and the holistic approach that creates variety in practice [28, 32].

The third major theme emphasized the quality of the general practice teaching in faculty. It is a determinant factor for a career choice with the clerkship. Positive experience and role models which were treasured by students and trainees [21, 27]. The stages and clerkships permitted to learn specific competencies and appreciate the specific context of general practice.

The fourth major theme was related to the professional and private life such as influence of family, community and the quality of life [24, 33, 34, 36].



Reasonable activity is sought to suit the family life [29] and had time for leisurely activities [38]. The type of students' community background is on importance. The students and trainees from rural background are more likely to choose to become a GP [23, 41].

Senior GP's support, family's support, friend's support, media's influence, collaboration networks with specialists and paramedics influenced the students' career choice [32, 41]. Shorter residency and lifestyle advantages are also decisive because of the increasing quality of life [33, 34].

## Discussion

### ***Main results***

The main result of the review is to show that students and trainees had positive views of General Practice. Any individual articles provided a global view of students and trainees' attraction to general practice. The twenty-four articles analyze gave an overview of the positive view to general practice. This positive vision could be synthesized with four major themes: general professional themes, specific GP's practice, teaching general practice and professional and private life.

A major result of the analysis of literature was that students had the same positive view on general practice than older GPs.

As Roos mentioned: more than two-thirds rated themselves as satisfied (very satisfied - fairly satisfied) with time spent at work or training and the major part of trainees would choose to be a GP again [20].

What was already known and was highlighted by this review is the role of clinical teaching in initial medical education. Internships with a senior GP give a positive role model [21, 27] and influence the choice of students and trainees in their future practice. Non-specific professional aspects like income or workload balance are always of importance for students like every profession [20, 24].

Freedom in work management and organization is also an important element to take in consideration [22, 24]. They are the major factors, which have an impact on career choice of students. The individual characteristic to be a GP like vocation is underrepresented because it has not been well studied by the surveys [24, 28, 42].

Some factors that are specific to general practice activities like intellectual stimulation with the holistic approach and variety in practice become more and more important in time but aren't determinant factors in career choice of students [35].

The students and trainees from rural background are more likely to choose to become a GP. This was a result in the previous literature [23, 41–43].

The capacity of a good balance between professional and private life should be taken in account by all policies to enhance the general practice workforce.

Social recognition and respect are values that influence career choice of students and trainees so stakeholders and health systems must take this in consideration [30, 33].

Articles conducted by questionnaires fail to take into consideration the competence and vocation of students. Individual characteristics of being a generalist and intellectual stimulation doctor seem less important for students in the literature.

### ***Comparison with previous reviews***

Senf et Al conducted a literature review on factors related to the choice of family medicine in 2003 [44]. Their results indicated that early career intentions are a good predictor of eventual specialty choice. They found that required time in family medicine during the process of medical education increases the number of graduates in family medicine.

### ***Limits and strength of the study***

The strength of this literature review is to show a global vision of positive factors of satisfaction for students and trainees according the literature.

There could be a selection bias because only articles in English were included with the exception of one article in German.

There could be confounding factors or interpretation bias because of the differences between the social health systems and the difficulties in linguistic understanding. This bias was limited by the fact that the research team was international and each member worked with users of health systems from different countries.

Main previous researches focused on the health system and the problems of the concerned countries. Most studies were carried out by questionnaires, focusing on issues of organization or business and did not fit into the heart of general practice. These studies show a partial view of the positive aspects felt by students about general practice.

## Conclusion

The literature review provides a general overview of the satisfaction of students and trainees attracted by general practice. The determinant factor is the quality of teaching and clerkships in general practice. Medical schools should promote primary care by proposing courses and clerkships in primary care with positive role models to each student. Another determinant factor for a student's choice is the quality of life that the specialty will give them.

Students and GPs have the same expectations towards workload, income, freedom for workplace and work organization. Both of them treasured variety in their practice.

As a main conclusion an alternative way for stakeholders to continuously improve the primary care workforce could be considerate the positive factors in health system policies rather than the negative ones.

The study of literature review suggests a model of student attracted to general practice that should be confirmed by other rigorous qualitative studies on the method level and then quantitative studies.

## Ethics statement

The Ethical Committee of the "Université de Bretagne Occidentale" (UBO), France approved the study for the whole of Europe: Decision N ° 6/5 of December 05, 2011.

## List of abbreviations

AAMC/Association of American Medical Colleges

EGPRN: European General Practice Research Network

GP: General practitioner

GPs: General Practitioners

NHS: National Health System

OECD: Organization for Economic Cooperation and Development

WHO: World Health Organization

WONCA: World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians.

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# Annexes

## PRISMA Diagram Womanpower literature review Students

Additional records identified through Grey literature

(n = 17)

Records identified through searching "Career choice or mobility

(n = 245)

Records identified through searching

"Job Satisfaction"

(n = 152)

Additional records identified through bibliography from included articles (n = 34)

Records after duplicates removed

(n = 414)

### Exclusion criteria

- Africa, Asia, South America 38
- Specific populations 39
- Specialists 68
- Nurses 7
- Patient satisfaction 45
- No abstract available 86
- Negative 51
- Irrelevant 76
- Only GP setting 15
- Literature review 3
- Can't found articles 2

- Language outside the team 2

Abstracts excluded  
(n = 283)

Abstracts screened  
(n = 414)

Full-text articles assessed for eligibility  
(n = 131)

Full-text articles excluded, with reasons  
(n = 107)

Exclusion criteria:

- Africa, Asia, South America 1
- Specialists 18
- Negative 20
- Irrelevant 63
- No abstract available 5
- Language out of the team 1
- Specific populations 3
- Only GP setting : 27
- Literature review 1

Studies included in qualitative synthesis  
(n = 24)



**Table 2**

Article	Method	General professional theme		Specific GP's practice							Teaching general practice				Professional and private life		Number of code by article
		A- Workload balance and income	B- Responsibilities and recognition for work quality	C- Effective medical management of patient	D- Freedom for workplace and work organisation	E- Individual characteristic to be a GP	F- Intellectual stimulation	G- Doctor-patient relationship	H- Relationship with other professionals	I- Variety in practices	J- Stages in General practice	K- Specific course on General practice in University	L- Role modèle	M- Teaching good relations of general practice with university	N- Influence of family and community	O- Quality of life	
article 01 (Phillips J, 2018)	CS			X			X	X							X	<b>4</b>	
article 02 (Gisler LB 2017)	CS	X		X	X	X			X							<b>5</b>	
article 03 (Harding C, 2016)	CS	X							X	X				X	X	<b>5</b>	
article 04 (Deutsch T 2015)	CS				X	X	X	X		X				X		<b>7</b>	
article 05 (Wright KM, 2016)	CS	X			X	X	X			X	X		X			<b>8</b>	
article 06 (Ster MP, 2015)	CS			X		X	X	X				X	X			<b>6</b>	
article 07 (Roos M, 2014)	CS	X			X		X	X						X	X	<b>6</b>	
article 08 (Meli DN, 2014)	CS	X		X	X		X		X	X		X	X			<b>8</b>	
article 09 (Steinhäuser J, 2013)	CS	X		X	X			X		X						<b>5</b>	
article 10 (Gill H, 2012)	CS				X		X			X			X			<b>4</b>	
article 11 (Zurro AM, 2012)	CS	X	X	X	X	X	X	X		X	X	X		X	X	<b>13</b>	
article 12 (Kiolbassa K, 2011)	CS	X	X			X	X	X			X			X	X	<b>8</b>	
article 13 (Watson J, 2011)	CS	X		X	X		X	X					X			<b>7</b>	
article 14 (Laurence CO, 2010)	Quali			X	X	X			X				X	X	X	<b>7</b>	
article 15 (Elliott T, 2009)	Quali	X			X	X	X	X	X	X			X	X	X	<b>10</b>	
article 16 (Feldman K, 2008)	CS	X	X		X					X					X	<b>5</b>	
article 17 (Hogg R, 2008)	CS	X			X									X	X	<b>4</b>	
article 18 (Lu DJ, 2008)	Quali	X			X				X	X				X	X	<b>6</b>	
article 19 (Thistlethwaite J, 2008)	Quali	X	X		X		X						X		X	<b>6</b>	
article 20 (Scott I, 2007)	Quali	X			X				X				X		X	<b>6</b>	
article 21 (Sinclair HK, 2006)	CS	X		X	X			X		X			X		X	<b>7</b>	
article 22 (Jordan J, 2003)	Quali		X		X					X			X			<b>4</b>	
article 23 (Somers GT, 2001)	CS	X		X	X		X	X	X	X				X	X	<b>9</b>	
article 24 (Weaver SP, 2001)	CS	X	X	X	X		X		X	X	X	X	X	X	X	<b>13</b>	
Number of studies on the topic	CS = 17 Quali = 7	<b>18</b>	<b>6</b>	<b>11</b>	<b>20</b>	<b>8</b>	<b>14</b>	<b>12</b>	<b>8</b>	<b>16</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>12</b>	<b>11</b>	<b>15</b>	

## SERMENT D'HIPPOCRATE

Au moment d'être admis 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 le demandera. Je ne me laisserai pas influencer par la soif du gain ou la recherche de la gloire. Admis dans l'intimité des personnes, je tairai les secrets qui me seront confiés. Reçu 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 et méprisé si j'y manque. »

HUIBAN (Guillaume) \_ **Which positive factors determine the choice of a career in General Practice for medical students and trainees? A systematic literature review.**

Th. : Méd. : Brest 2019

**RESUME:**

Background: Many studies focused on the negative aspects of the specialty of General Practice. Researchers from the EGPRN (European General Practice Research Network) are some of the few who have shown how the role of a GP could be appealing. The aim of this eight-country European study was to determine which factors could attract and retain students and trainees into General Practice.

Method: Systematic review of the literature from Pubmed, Embase and Cochrane databases issued from 01/01/2000 to 12/31/2018 by two researchers working blind according to the PRISMA guidelines and on a qualitative analysis. The database-specific search was conducted with equations including « Family Practice », « General practitioners », « Career choice » and « Job satisfaction » keywords.

Results: 24 articles out of 414 were selected. According to the literature, satisfaction factors can be classified into three themes and twelve subthemes. The most frequently found are: the teaching of General Practice, workplace and organization freedom, quality of life, the variety in practice, workload balance and income. This analysis also highlighted factors of physicians' job satisfaction, such as intellectual stimulation and the relationship built with patients and other professionals.

Conclusion: Literature on the appeal of the students to General Practice found a lot of positive factors. Any article provides a global view of a student and trainee attracted to General Practice. Nevertheless, articles as a whole design one. Courses and clerkships in General Practice with positive role models are determinant for career choice and should be integrated as a core of medical schools teaching.

**MOTS CLES :**

FAMILY PRACTICE ; GENERAL PRACTITIONERS . FAMILY PHYSICIANS . JOB SATISFACTION . CAREER CHOICE

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