



# Prof. Dr. Serge Voronoff's Youth Vaccine and Its Reflections on the Early Republic (1928-1941)

Prof. Dr. Serge Voronoff'un Gençlik Aşısı ve Erken Cumhuriyet'e Yansımaları (1928-1941)

Yağız Fatih Nazlier<sup>1</sup>(iD), Ateş Kara<sup>2</sup>(iD)

<sup>1</sup> PhD Student, Department of History, Hacettepe University Faculty of Literature, Ankara, Türkiye

<sup>2</sup> Division of Pediatric Infection, Department of Pediatrics, Hacettepe University Faculty of Medicine, Ankara, Türkiye

**Cite this article as:** Nazlier YF, Kara A. Prof. Dr. Serge Voronoff's youth vaccine and its reflections on the early republic (1928-1941). J Pediatr Inf 2025;19(3):e210-e219.

\* This article was prepared as part of the project "History of Vaccination and Infectious Diseases in the Ottoman Empire and the Republican Period and the Creation of Source Documents," supported by TÜSEB/Türkiye Vaccine Institute. Project No: 2022ARGE02-28235.

## Introduction

Since the beginning of human existence, people's reactions to the brevity of life and the strength of their desire to live have brought about an endless quest for rejuvenation and immortality. The belief that drinking the water known as the water of life, the fountain of youth, or the elixir of youth will grant immortality has survived in various forms to the present day. In this context, the youth vaccine, a product of hormone research that began in the late 19<sup>th</sup> century and caused a sensation in the first half of the 20<sup>th</sup> century, has become the focus of our study. This study utilized three different source groups. These are: national and international current literature,<sup>1</sup> copyrighted and translated works written during the Early Republic period, and finally, newspapers that perhaps best enable us to understand the reflection of the youth vaccine in the Early Republic. Although the time frame of this study on youth vaccination is flexible, its main boundaries are set between 1928, when Dr. Serge Voronoff visited

Istanbul and the first animal experiments were conducted in our country, and 1941, when youth vaccination lost its popularity and news reports on the subject began to disappear from the press. The data obtained in our research has been evaluated within the paradigm of social medical history. In this context, the first section examines people's efforts to rejuvenate and achieve immortality, from the elixir of life to hormone studies. Then, in the second section, the life stories of Dr. Serge Voronoff, the pioneer of the youth vaccine, and Dr. Behçet Sabit (Erduran), who applied this method in our country, are discussed in the context of the youth vaccine. The third chapter evaluates how the youth vaccine surgery was performed and the first applications carried out in this context. One of the main points of this chapter is the reflections of the youth vaccine on the Early Republican period. The final chapter assesses the impact of the youth vaccine surgery on scientific studies within its historical context.

<sup>1</sup> While there are numerous sources available in international literature, there are very few studies on this subject in our country. See (1-3).

## Correspondence Address / Yazışma Adresi

Yağız Fatih Nazlier

PhD Student, Department of History,  
Hacettepe University Faculty of Literature,  
Ankara, Türkiye

E-mail: yf.nazlier@gmail.com

Received: 04.05.2025 Accepted: 28.08.2025

Available Online Date: 30.09.2025

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Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

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## 1. From the Water of Life to the 20<sup>th</sup> Century: Immortality and Rejuvenation

Since the earliest days of humanity, the desire to live in the face of the brevity of life and the void left by death has driven people in almost every society to seek immortality and eternal life. In Turkish-Islamic sources, water believed to grant immortality to those who drink it is referred to by various names such as âb-ı hayat, âb-ı hızır, âb-ı zindegî, hayat çeşmesi, and bengi su (*all meaning the water of life or the fountain of youth*), and has manifested itself in different forms across different societies (4). The first examples of the search for the water of life, or immortality, can be seen in Sumer, where written history began. The Epic of Gilgamesh, which tells the story of Gilgamesh's search for immortality after the Great Flood and the events that befall him during this process, is one of the first examples of the search for the water of life (5). Another example is the legend of Alexander the Great. In this epic, Alexander the Great, having learned from scholars that the water of immortality exists, sets out to find it, and the events that occur during this journey are narrated. Apart from legends, the Qur'an also indirectly refers to the water of life while narrating the story of Moses and Khidr bringing a dead fish back to life (4,6).

Islamic scholar Abu Bakr Muhammad bin Zekeriya al-Razi (865-925) sees the human quest for immortality as an expression of insatiability. According to him, even if a person possessed half of the world, he would still want the other half. Suppose he possessed the entire world; he would then desire to possess the entire universe, yet he would still not be happy because he would desire immortality to sustain this possession. In this context, the quest for immortality is a dream fueled by insatiability. Efforts to realize this dream have continued in the exploration of new worlds (7,8).

Ponce de Leon (1460-1521) was among those who sought immortality in the 16<sup>th</sup> century. Leon, a Spanish soldier, was one of those who accompanied Christopher Columbus (1451-1506) on his intercontinental voyage of discovery. According to legend, Leon, who was among the first to set foot on what is now Florida, set out in search of the fountain of immortality, as well as gold and slaves, but this quest never came to fruition. We cannot determine the exact truth behind Leon's quest for the fountain of youth, but the emergence of such legends and/or imaginary endeavors in connection with the discovery of America is a testament to the fact that the quest for youth and immortality will continue as long as humans exist (9,10).

One of the most important developments in the quest for rejuvenation and immortality was the discovery of the endocrine system. In this field, Arnold Berthold conducted various experiments on roosters in the mid-19<sup>th</sup> century. Berthold worked on two roosters, one normal and one castrated, and proposed the first ideas that aging could be reversed. Following these breakthroughs, research into the physiology of hormones and efforts to prevent or even reverse the aging process through hormones began to increase. Among the founders of endocrinology was French physiologist and neurologist Dr. Charles Edouard Brown-Sequard, who, at the age of 72 in 1889, stated that he had lost his mental and physical abilities due to old age and attempted to rejuvenate himself by crushing the testicles<sup>2</sup> of young dogs to extract their essence. Brown-Sequard injected the extracts he obtained under his skin and claimed that this method would improve people's mental functioning, increase their sexual potency, and cure various urological diseases. Dr. Brown-Sequard tested the extracts on himself but did not achieve any results and died at the age of 77 (9,12-14).

Following the work of Arnold Berthold and Brown-Sequard in the field of endocrinology, Dr. Eugen Steinach emerged as one of the most influential figures in this field. In the late 19<sup>th</sup> century, he conducted research on the testes of men and the ovaries of women. As a result of these studies, it was believed that sexual glands<sup>3</sup> could be separated from reproductive and hormonal functions, and therefore rejuvenation could be achieved through vasectomy<sup>4</sup> in men and radiation in women. These procedures were first performed on animals and then on humans. At the beginning of the 20<sup>th</sup> century, many academics and famous intellectuals, including Sigmund Freud and William Butler, underwent vasectomy surgery. The Steinach method gained considerable popularity in Europe in the early 20<sup>th</sup> century. For instance, with the loss of young lives during World War I, various claims emerged that Europe could be revitalized by rejuvenating the elderly. As it became clear that the vasectomy method was not effective in rejuvenation efforts, its popularity declined, and Dr. Steinach withdrew from the scientific community. Following Dr. Steinach, Serge Voronoff (1866-1951) and his youth vaccine method, which forms the core of our study, began to gain prominence (9,12,13).

## 2. Dr. Serge Voronoff (1866-1951) and Dr. Behçet Sabit (Erduran) (1886-1980)

Dr. Serge Abramovich Voronoff, who would become famous for his youth vaccine method and later be ostracized from the scientific community for the same reason, was born

<sup>2</sup> Husye: Erbezi; testicule (11).

<sup>3</sup> Gudde: Bez, beze, gland (11).

<sup>4</sup> Vasectomy: Suturing the two parts of the vas deferens together (15,16). Vasectomy was known to have been used for eugenic purposes to sterilize individuals before Dr. Steinach. However, it was first used for rejuvenation purposes by Dr. Steinach. Among those who underwent this surgery was Sigmund Freud, who had the procedure done not for rejuvenation but to cure a recurring cancer, though it yielded no results (2).



**Figure 1.** Prof. Dr. Serge Voronoff (1866-1951) (20).

in Voronezh, Russia, in 1866 (Figure 1). The Voronoff family, who were vodka producers, later settled in France, and Dr. Serge Voronoff continued his education in Paris (1,17). After completing his middle school and high school education, he graduated from the Paris Faculty of Medicine with distinction and specialized in surgery. In 1896, he went to Egypt and worked as the chief physician of Mr. Khedive Abbas Hilmi for a period of time. Dr. Voronoff, while practicing medicine in Egypt, noticed signs of premature aging in castrated men and had the opportunity to observe the effects of castration on aging through his own experience. The main characteristics Dr. Voronoff observed in castrated men were obesity, lack of body hair, wide pelvises, thin bones, loose muscles, sluggish movements, memory problems, and mental retardation (18). After continuing his work in Egypt for 14 years, Dr. Serge Voronoff returned to Paris in 1910 with extensive data and began working as the head of the surgical department at the Auxiliary Hospital. Dr. Voronoff began working on the possibility of reversing aging through glandular transplants. Dr. Serge Voronoff first performed ovarian and testicular transplants on various animals, followed by experiments on humans after the animal trials (19).

Dr. Serge Voronoff stated that the internal secretions of animals are the same as those of humans and that, as a result, these glands would perform the same function when transplanted into humans. He therefore decided to perform transplants of testicles, ovaries, and thyroid glands from monkeys, particularly chimpanzees. In this context, he initially sought to obtain the necessary monkeys from French colonies and later established a monkey farm at Grimaldi Castle, located within the borders of modern-day Italy, from which he obtained the monkeys (21).

In 1935, with the chemical isolation of testosterone, Dr. Voronoff's youth vaccine program officially ended, and he was expelled from academia. However, he continued his research on the transplantation of testicles and thyroid glands in various countries until the end of his life. During World War II, his brother Georges Voronoff, who had worked with him on the youth vaccine, was deported to Auschwitz. Dr. Serge Voronoff, however, avoided any issues due to his presence in the United States and passed away in Lausanne in 1951 as a millionaire (2,12,22).

Behçet Sabit (Erduran), the administrator of the youth vaccine in Türkiye and the founder of modern urology, was born on February 15, 1886, in İstanbul (Figure 2). His father was Mr. Mehmet Sabit, the Director of the Fenerler Tax Office. Mr. Behçet Sabit completed his primary and secondary education in Çanakkale and İstanbul and graduated from Üsküdar High School. Mr. Behçet Sabit began his medical education at the Medical School in 1905. Due to his outstanding success at school and his interest in urology, he became the first assistant at the urology clinic established by Dr. Cemil Topuzlu in his surgical clinic in 1909. After working as an assistant for a period, he served as deputy chief physician with the rank of medical captain during the Balkan War, and later as a mobile hospital surgeon in the Yıldız and Intepe batteries during World War I. He was also awarded two silver medals of merit for his outstanding service (23-25).

After his successes in Çanakkale, Dr. Behçet Sabit Bey returned to İstanbul and wanted to go abroad to specialize in urology, but he was unable to apply due to the ongoing war. Following this, Dr. Behçet Sabit, through the intermediary of



**Figure 2.** Ord. Prof. Dr. Behçet Sabit (Erduran) (1866-1980) (25).

Ahmet Dede (wise old man), the Sheikh of the Galata Mevlevihanesi (Galata Mevlevi Lodge), whom he had met during his early years at the Medical School, expressed his desire to the Sultan Mehmed Reşad of the time to go abroad to specialize in urology. Thanks to the mediation of Sheikh Ahmet Dede of the Galata Mevlevihanesi (Galata Mevlevi Lodge) and Sultan Mehmed Reşad's sensitivity to urology, he was sent to Berlin in 1917 (26).<sup>5</sup> When Dr. Behçet Sabit went to Germany, he first worked in the urology department of Prof. Dr. Carl August Gustav Bier's surgical clinic, which was managed by Prof. Dr. Eugen Joseph. Later, on the recommendation of Prof. Dr. James Adolf Israel, he worked as an assistant to Prof. Dr. Ferdinand Karewski at Virchow Hospital. After completing his urology specialization, Dr. Behçet Sabit Bey returned to Istanbul and began working as the head of the urology clinic at Gureba Hospital. During this time, he also fought against a typhus epidemic and achieved successful results (25-27).

In 1924, Dr. Behçet Sabit was invited to Ankara due to Atatürk's kidney disease. He stayed in Ankara for a while, contributing to Atatürk's treatment, and also served as chief physician at Ankara Numune Hospital (24). Later, in 1925, Dr. Behçet Sabit returned to İstanbul, reorganized the Urology Clinic at the Faculty of Medicine, and played an important role in the development of modern urology in our country. Additionally, in 1933, he co-founded the Turkish Urology Association and began publishing its journal, the Turkish Journal of Urology (23,28,29).

Dr. Behçet Sabit trained many specialists in the field of urology and placed great importance on continuously developing his professional knowledge and skills. He frequently traveled to Europe and America to attend international conferences, keep up with scientific developments, and share the information he gained during these trips with his readers in newspapers (Figure 3) (30-34). During his trips abroad, Dr. Behçet Sabit met Dr. Voronoff through his work in urology and learned about the youth vaccine method he had developed. Thanks to this friendship, which developed into a close bond over time, Dr. Behçet Sabit arranged for Dr. Voronoff to visit Türkiye, and thus the first applications of the youth vaccine began in our country (1).<sup>6</sup>

### 3. Youth Vaccination Surgery and Initial Applications

Dr. Voronoff stated that cells are renewed throughout human life, but that the rate of renewal slows down over time and that each new cell does not function as well as the previous one. To increase the rate of cell renewal and thereby



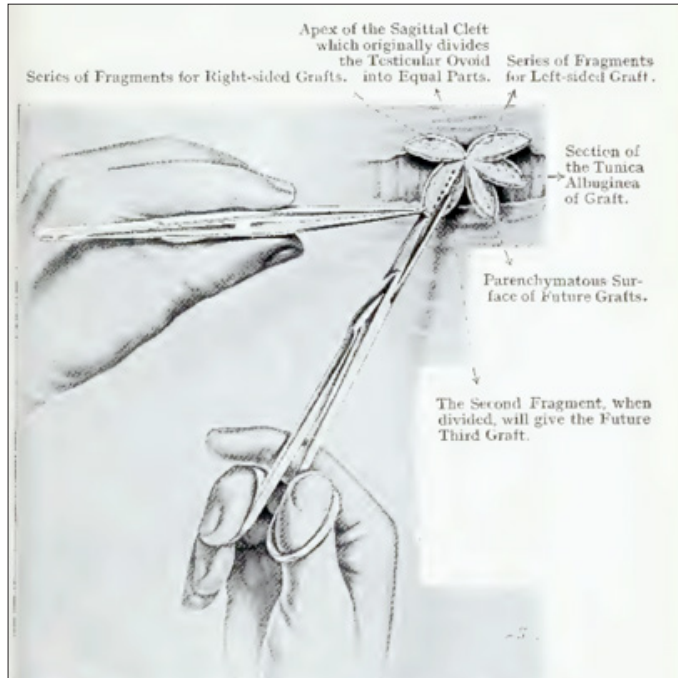
**Figure 3.** Newspaper article in which Dr. Behçet Sabit shared his impressions from his travels (January 14, 1929) (30).

reduce aging as much as possible, enabling people to regain their youth, he developed a type of tissue transfer application called the "youth vaccine." (35).

Understanding how the youth vaccine surgery performed by Dr. Serge Voronoff was carried out will also help in understanding the course of events. In this context, we can see how the youth vaccine surgery was performed and what processes it went through through Dr. Serge Voronoff's works including *Rejuvenation by Grafting* (1925) and *Testicular Grafting from Ape to Man* (1928), as well as Dr. Cemil Şerif (Baydur)'s work titled

<sup>5</sup> Sultan Mehmed Reşad's sensitivity to urology was due to bladder stones that had been bothering him for a long time. In 1915, Dr. James Adolf Israel came to Istanbul and performed surgery on Sultan Mehmed Reşad, removing two large stones from his bladder (26).

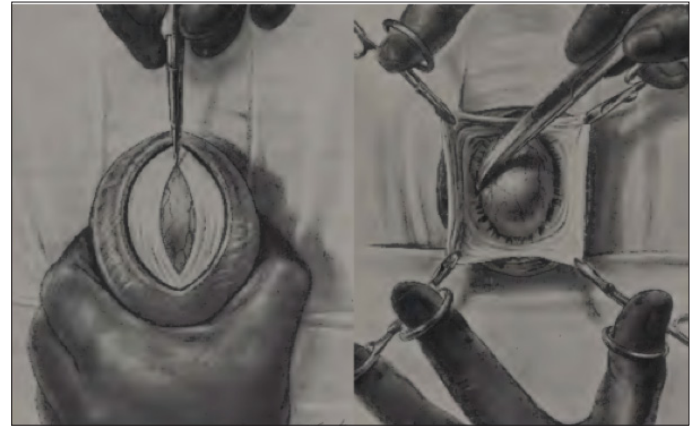
<sup>6</sup> Furthermore, in the memoirs of Ayla Erduran, daughter of Dr. Behçet Sabit Erduran, we see that Dr. Behçet Sabit conducted various experiments with Dr. Voronoff and that Ayla Erduran was not pleased with this situation. "Professor Voronof, the owner of the Grimaldi Castle in Monaco, conducted various experiments on poor monkeys." (27).



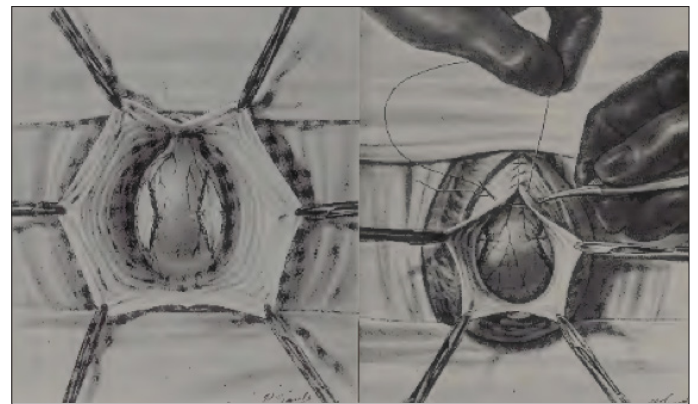
**Figure 4.** The testicle removed from the chimpanzee and separated into orange-shaped segments (Figure 5) (37).

*Gençlik Aşısı Esasları (The Basics of Youth Vaccine)* (1928), which is one of the first works on youth vaccination in Türkiye (36-38).<sup>7</sup>

First, the person who will undergo the youth surgery is examined to see if they have any diseases. If the person has a disease, it is treated first, then they are taken into surgery. If the patient does not have any diseases that will affect the youth vaccine, they are prepared for surgery by eating vegetables and fruits. The surgery begins with the donor monkey (preferably a chimpanzee). The chimpanzee is first placed in an anesthesia cage and put to sleep, then the testicle is removed, and the epididymis is separated. The removed testicle is cut into orange-shaped pieces and kept in a cool environment before being transferred to the human (Figure 4). Next, the patient who will receive the youth vaccine is placed under general anesthesia. One side of the scrotum is incised approximately 5-6 cm, and the tunica vaginalis, which is the outer membrane of the testicle, is opened (Figure 5). To increase blood flow to the surface where the graft will be placed, the inner surface of the membrane is lightly scratched, and the graft pieces are placed under the membrane. The tunica vaginalis is closed, and the connective tissue and skin layers are sutured to complete the surgery (Figure 6) (36-38).



**Figure 5.** One side of the scrotum is cut approximately 5-6 cm and the tunica vaginalis is opened (38).



**Figure 6.** Placement of graft pieces under the membrane and then closure of the tunica vaginalis (38).

Dr. Serge Voronoff began performing youth vaccine surgeries upon his return from Egypt (1910). In this context, Dr. Voronoff conducted youth vaccine trials on many animals, primarily goats, rams, horses, donkeys, bulls, and monkeys. Based on his experiences, Dr. Voronoff noted that young animals became younger after receiving glandular transplants from older animals and presented case examples to the Paris Biological Society on January 15, 1919 (1,19,40). Dr. Voronoff also began performing gland transplants on humans in addition to animal experiments. In this context, the first gland transplant from a monkey to a human (thyroid) was performed in 1913. Dr. Serge Voronoff transplanted thyroid tissue taken from a chimpanzee into a child named Jean B. who lived in Nice in 1913 and suffered from cretinism.<sup>8</sup> According to the allegations, after the surgery, the child's mental

<sup>7</sup> Cemil Şerif (Baydur) was born in Muğla in 1894. After completing his high school education in İzmir, he was accepted into the Medical School and graduated in 1918. After graduation, he first worked as an assistant in an eye clinic. In 1935, he went to Paris on his own initiative to study neurosurgery under Dr. Clovis Vincent. Upon returning to the country, he worked in the neurosurgery clinics of various hospitals, including the Bakırköy Mental and Nervous Diseases Hospital. Cemil Şerif, who was fluent in French and German, kept up with international literature and published various works. After practicing medicine for 41 years, Cemil Şerif retired and passed away in İstanbul in 1967 (39).

<sup>8</sup> Cretinism: A condition characterized by stunted physical, sexual, and mental development and dwarfism due to insufficient secretion of thyroid hormone; cretinism (15,16).

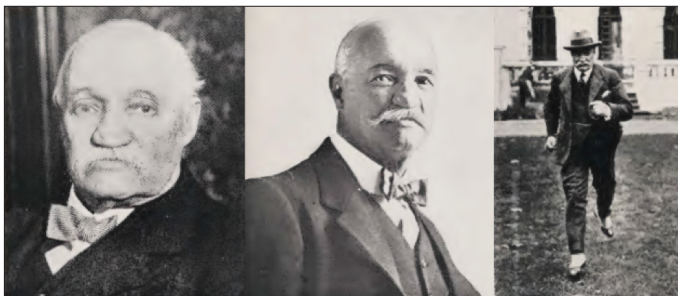


**Figure 7.** Jean B., aged 15, before thyroid transplant and one year after transplant (20).

retardation improved, and his skin color, weight, and height became equal to those of his peers (Figure 7) (18,20,21).

Dr. Voronoff began testing testicular glands, which are also the main component of the youth vaccine, on humans in 1920, in addition to thyroid transplants. Initially, Dr. Voronoff sought to obtain testicular glands from criminals sentenced to death, but faced various challenges, leading him to turn to monkeys, as he had done with thyroid samples (13). Between 1920 and 1930, Dr. Voronoff, along with his brother Georges Voronoff and other wealthy doctors, engineers, artists, and academics, performed youth surgery on a group of individuals (Figure 8). This surgery caused quite a stir in the public sphere, leading to the implementation of youth vaccines not only in France but also in many other countries around the world, including the United States, Italy, Chile, India, Russia, and Brazil (9,18).

In Türkiye, the first applications of the youth vaccine were carried out with the arrival of Dr. Serge Voronoff in İstanbul. On April 6, 1928, Dr. Voronoff, who came to İstanbul at the invitation of Dr. Behçet Sabit (Erduran), held a conference attended by professors, doctors, and students at the amphitheater of Haydarpaşa Medical Faculty. Following the conference, Dr. Serge Voronoff and Dr. Behçet Sabit (Erduran) vaccinated a young lamb with the vaccine obtained from a two-year-old



**Figure 8.** The condition of a 74.5-year-old man named E.L. before undergoing a youth vaccine surgery from a chimpanzee and 2.5 years after the surgery (37).

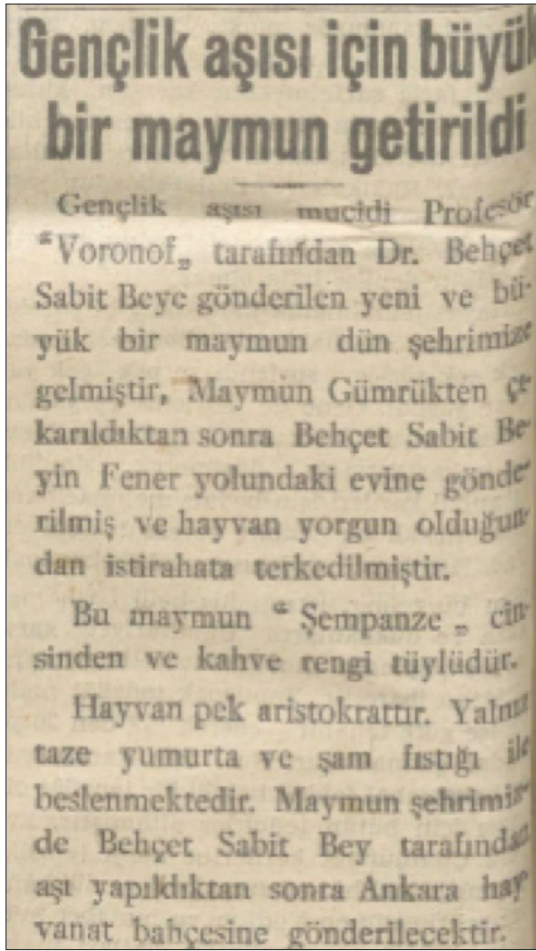
ram. A year after Dr. Voronoff's visit, a news article reported that the young lamb had grown rapidly and that its meat and wool were being utilized more extensively (Figure 9) (41). Following the first vaccination, it was reported in the media that various veterinarians experimented with the youth vaccine on lambs (42).

The first youth surgeries performed on humans in Türkiye were carried out using monkey testicles sent by Dr. Serge Voronoff to Dr. Behçet Sabit (Figure 10) (43). In this context, the first surgery took place on September 5, 1928, at the German Hospital. This surgery, performed under the leadership of Dr. Behçet Sabit, was carried out on Mr. İsmail, who was brought from Hospice (1). According to a news report dated April 27, 1929, Dr. Behçet Sabit stated that Mr. İsmail, a 69-year-old man who had undergone the youth vaccine surgery, expressed a desire to marry and work three months after the vaccination. Additionally, he stated that despite Mr. İsmail's various illnesses, his significant benefit from the vaccine refuted the claims made against it (44,45).

Another operation, according to information provided by Altıntaş, was performed on a 35-year-old eunuchoid



**Figure 9.** News article in Cumhuriyet newspaper about a lamb receiving a youth vaccine (August 26, 1929) (41).



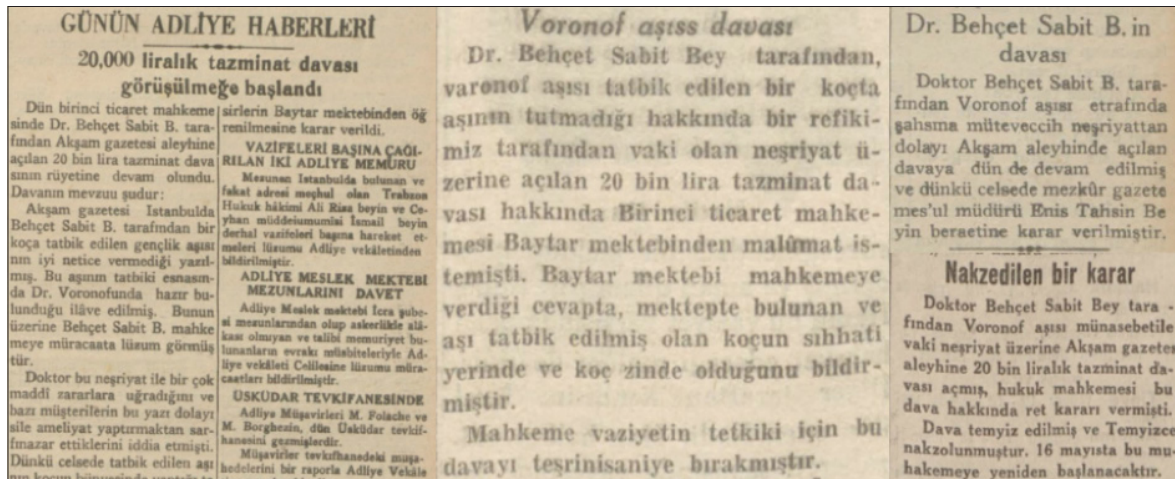
**Figure 10.** News about the second chimpanzee sent by Dr. Serge Voronoff to Dr. Behçet Sabit Erduran for his youth vaccine (May 14, 1929) (43).

merchant from Erzurum in exchange for 500 liras. In 1934, approximately five years after the surgery, Dr. Behçet Sabit Bey stated in an interview that the youth vaccine he administered to a young eunuchoid individual did not show any significant

effect (1,45-47). Following these two surgeries, Dr. Serge Voronoff sent another monkey to enable further youth vaccines to be administered. Thanks to this monkey, two more individuals, aged 75 and 52, underwent surgery (1).

According to the press, the other two people who underwent surgery were Mr. Ubeydullah and Dr. Besim Ömer (Akalin) Pasha. Beyoğlu Marriage Officer Mr. Ubeydullah, who was alleged to have undergone a youth vaccine operation, denied the allegations, stating that he had undergone a type of urology operation performed by Dr. Behçet Sabit, with the following words: "[...] They wrote that I had a Voronoff vaccine operation. This is a lie. I am now seventy-two years old, but this is my first term. God willing, I will live longer. I feel young." Dr. Besim Ömer Pasha, as understood, felt no need to make any statement because he knew that these reports were sensationalized by the press (48,49).

With the introduction of the youth vaccine in Türkiye, the subject became both popular and heavily criticized in the press. Most newspapers began to publish various reports claiming that the vaccine had no effect, that the areas where the vaccine was administered became infected, that people turned into monkeys, and that the vaccine was dangerous (50-53). In response, Dr. Behçet Sabit filed a 20,000-lira compensation lawsuit against the Akşam newspaper. The subject of the lawsuit was an article in the Akşam newspaper stating that the vaccination performed by Dr. Behçet Sabit and Dr. Serge Voronoff on a goat had no effect (54). Dr. Behçet Sabit stated that he had suffered financial damage due to such news reports and that some of his clients had decided not to undergo surgery because of these articles (55). The lawsuit filed by Dr. Behçet Sabit was first heard in the commercial court and then transferred to the civil court. The civil court dismissed the case, the case was appealed, and the process continued. It appears that Dr. Behçet Sabit Bey's case was not successfully resolved (Figure 11) (56).



**Figure 11.** News reports on the lawsuit filed by Dr. Behçet Sabit against the Akşam newspaper for its statements opposing the youth vaccine (54-56).

The opinions of doctors of that period regarding the youth vaccine are also quite important. In this context, it is not possible to say that doctors who expressed their opinions in newspapers and books agreed on a common point. For, instance, Dr. Osman Şerafettin (Çelik)<sup>9</sup>, stated that the youth vaccine is a very good advancement, that thanks to this vaccine people are getting a little closer to their dreams of rejuvenation, that rejuvenation through hormones is possible, and that in this context the youth vaccine is effective (58). On the other hand, Dr. Ahmet Şükrü (Emed)<sup>10</sup> claimed that youth could not be achieved with such vaccines, that the vaccine had no effect, and emphasized that there was only one way to achieve youth, which was through good food and pure air (59).

Op. Dr. Cemil Şerif (Baydur), author of the book *Principles of Youth Vaccination*, explains in his work that he views youth vaccination positively through the metaphor of plants (botany). *"Isn't that the case with plant vaccines too? Thanks to vaccines, the perfection achieved in the flowers and fruits of plants is greatly appreciated."* In addition, Op. Dr. Cemil Şerif (Baydur) stated that youth vaccines are quite effective in humans, rejuvenating them, and that Dr. Serge Voronoff was successful (36).

While doctors of the time evaluated the youth vaccine in this way, Kazım Nami (Duru), an educator and bureaucrat, expressed his hope that the youth vaccine would have an effect on suicidal individuals in the preface to his translated work, *Life and Death: The Youth Vaccine* (1928). *"We also hope that these writings will have a positive effect on those who are contemplating suicide, such a tragic act."* (35). In fact, this statement is based on statistical research conducted by French sociologist Max Bonnafous on suicide cases between 1916 and 1926. According to this study, the suicide rate among Muslim Turks increased significantly during the years mentioned above, creating a kind of suicide epidemic discourse (60). Kazım Nami, in his role as an educator and bureaucrat, believed that youth vaccination could be effective against suicide and mentioned this in the preface of his work.

When we look at the period in context, one of the prominent actors other than suicide victims is women. No woman in Türkiye has ever undergone youth vaccination surgery. Given that this surgery has been performed on very few women

worldwide, women's reactions to it are also very important in terms of the social effects of youth vaccination. In this context, Dr. Cemil Şerif (Baydur) stated that he heard the following words from women many times: *"You don't think about us poor women at all! While you are trying to rejuvenate our unfaithful husbands, we are becoming destitute; now that our men are rejuvenated, they will look down on us and go to younger women who will flatter them. We want to grow old with our loved ones."* (36). After relaying what he heard, Dr. Cemil Şerif (Baydur) also raises various issues that may arise as a result of youth vaccines administered to women. In particular, the question arises: *Who will be the mother of the child that may be born in the future if ovaries taken from a young woman are transplanted into a relatively older woman?* As understood, when ovaries taken from female monkeys are transplanted into older women, no problem arises since childbirth is already impossible. However, when ovaries taken from a young woman are transplanted into an older woman, various issues may arise regarding the lineage of the child, which is why the youth vaccine is administered to men rather than women (36).

#### 4. Contributions of the Youth Vaccine to Science

Although the youth vaccine has been considered a failed project over time, it has laid an important foundation for future scientific studies and served as a source of inspiration. It has played a significant role in the development of urology, endocrinology, and transplant surgery (9,13).

Dr. Serge Voronoff's youth vaccine project also marked a significant turning point in the development of organ transplantation. It provided the necessary infrastructure for medical advancements such as kidney transplants, vascular transplants, face transplants, heart transplants, and various limb transplants. In fact, as early as 1939, a news report stated that Dr. Pauchet had attached intestinal tissue to the throat of a person severely damaged by acid, covering the wound sites with skin to minimize defects. In addition, Dr. Carrel reported that he had successfully performed surgery to swap the legs of a black and white dog (61). Furthermore, Dr. Serge Voronoff made attempts to perform the world's first kidney transplant. Dr. Voronoff, who was only 19 years old and trying to treat a young girl who had lost one of her kidneys, learned that the disease had spread to the other kidney. He then applied to the

<sup>9</sup> Osman Şerafettin (Çelik) was born in Hasköy in 1881. He completed his primary education in Bulgaria and his secondary education in Istanbul (Galatasaray). After graduating from the Faculty of Medicine in 1909, he specialized in bacteriology in France and Germany. Upon returning to Istanbul, he first served as Deputy Director of the Bacteriology Department at the Health Directorate, followed by Deputy Director of Bacteriology at the Pharmacy and Dentistry School. He later worked at the General Health Directorate as Deputy Director of Public Health and at the Gureba Hospital in the Infectious Diseases and Bacteriology departments. Dr. Osman Şerafettin (Çelik), who also served as Chairman of the Administrative Board of the Turkish Medical Association, was awarded the Independence Medal for his services in the fight against malaria in Ankara and passed away in 1945 (57).

<sup>10</sup> Ahmet Şükrü (Emed) was born in Istanbul in 1898. He completed his primary and secondary education in Beşiktaş and his high school education in Kabataş. He graduated from the Faculty of Medicine in 1929. He went to Germany, France, and Austria to specialize in psychiatry and neurology. Upon returning to Istanbul, he began working as the head of the Serology Laboratory at Toptaşı Bimarhanesi. Dr. Ahmet Şükrü (Emed) then became a specialist at the Bakırköy Mental and Nervous Diseases Hospital, and also worked at Gureba Hospital, Beyoğlu Zükur Hospital, and Cerrahpaşa Hospital. He also served in the Child Protection Agency, the Turkish Medical Association, and the Turkish Neuropsychiatric Association. He passed away in Istanbul in 1970 at the age of 57.



**Figure 12.** News article in Vatan Newspaper about Fuat Özgen, a final-year student at the Faculty of Medicine (February 10, 1941) (63).

prosecutor's office to obtain the kidneys of a condemned prisoner. However, the prosecutor's office rejected the request, and the kidney transplant could not be performed, resulting in the young girl's death (35). Developments in organ transplantation around the world also influenced academics in our country, sparking interest in the field. For example, in a 1942 column written by Prof. Dr. Fahri Arel, the question "Is it possible to transplant a similar organ in place of a non-functioning one?" stands out (14,62).

The youth vaccine attracted the attention of academics and physicians, and especially medical students, and inspired research in this field. For example, according to a news report published in 1941, Fuat Özgen, a final-year medical student, claimed to have discovered a method of rejuvenating people through blood reactions. As far as we can tell, this has not been confirmed, and no discovery or invention has been made. However, even the emergence of such claims can be regarded as the fact that medical schools oriented themselves towards this field (Figure 12) (63).

### Conclusion

At the end of World War I, which claimed the lives of millions of people, the youth vaccine surgery, which was started to be administered to people by Dr. Serge Voronoff, had a sensational effect. The youth vaccine, which was greeted with great excitement in Türkiye as well as in the rest of the world, was administered in our country by Dr. Behçet Sabit (Erduran). Although the youth vaccine was later deemed unsuccessful, the media continued to report on these developments for a long time, keeping public interest alive. So much so that even after hearing about the vaccine's failure, people still wanted to receive it. When we examine the underlying motives behind this enthusiasm, we see a generation that had been constantly

struggling with war. It can be said that people who were unable to enjoy their youth due to the misery and oppression brought about by the war always viewed the youth vaccine surgery positively.

When we look at the doctors of the early Republican era, we can say that there was no common opinion on the youth vaccine surgery. While some doctors viewed this vaccine positively, others stated that the youth vaccine was a useless endeavor. On the other hand, in some books written about the youth vaccine, we see that it was interpreted as a project that would prevent people from committing suicide and restore their youth. Although the youth vaccine surgery had a positive effect on people's emotions and thoughts, it was also observed that it increased the gender gap between women and men in a social context. The youth vaccine has been administered to men rather than women. Although there are scientific and social explanations for this situation, Turkish women in particular have stated that their husbands will rejuvenate with the youth vaccine in the future, but they will continue to age, and they have demanded that women also receive the youth vaccine or that no one receive the vaccine and that they age together (35,36,58,59).

Although the youth vaccine has been seen as an unsuccessful project in a temporary context, it has provided an important foundation and inspiration for future scientific studies. The youth vaccine surgery represents an important turning point in organ transplantation. After this project, significant developments have been made in the transplantation of kidneys, blood vessels, hearts, skin, and other organs. Additionally, there has been an increase in scientific research on hormones and, consequently, the endocrine system.

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