Eponyms and the Nazi Era: Time to Remember and Time for Change*

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Key words: Holocaust, eponym, ethics, medical nomenclature

Abstract

Eponyms are titles of medical disorders named for individuals who originally described the condition. They also help us remember and identify the disorder. Medicine is replete with them, and changing them or eradicating them, for whatever reason, is not simple. But when there is a moral issue involved – for example, research conducted under overwhelming unethical conditions – we believe it wrong to perpetuate and thus "reward" the memory of the individual for whom the disorder is named. The name of a syndrome should thus be discontinued if described by an individual whose research used extreme measures or who was involved in atrocities against humanity. Ethical considerations should be introduced into medical nosology just as they exist in patient care and research. This article details a group of notable eponyms, the names of which are associated with overt crimes of the medical community during the Nazi era, and provides alternative medical nomenclature. In addition, examples are provided of eponyms named after Nazi era victims, eponyms of those who protested such injustices, and eponyms of those who had to flee discrimination and death. These should be remembered and even strengthened, as opposed to those of the perpetrators, which should be obliterated. Since the greatest accolade a physician can earn is praise from his colleagues as expressed in an eponym entrenched in one's name, the medical profession should remove any honor given to physicians involved in crimes to humanity.

IMAJ 2007;9:207–214

An eponym is a term based on or derived from the name of a person. In medicine, eponyms are the names of disorders linked to individuals who originally described the condition. Such labels remain enmeshed in medical discourse based on tradition and the lack of a generally agreed-upon alternative. Eponyms also play a valuable role in aiding both medical student and physician in remembering and identifying the disorder. Furthermore, eponyms often introduce historical context to the description and understanding of the disorder, often linked to societal conditions, sociological phenomena and available technology. Although the use of eponyms is widespread, certain countries encourage and others discourage such descriptions.

While the movement to change names of disorders in certain contexts may be encouraged as a matter of taste, when an issue of ethics is involved, changing or eradicating such eponyms becomes critical. These are situations where the work associated with the disorder and the individual after whom the disorder is named was carried out under such overwhelming unethical conditions that perpetuating and thus "rewarding" the memory of the individual with the respective eponym is not only a travesty but an affront to the profession [1]. Some, however, argue that such eponyms should be preserved in order to preserve the memory of such unethical behavior and remind physicians of how the profession can err [2] Such a jarring reminder will also permit students to remember what they learned in ethics classes long after the period of studies ended [2]. It may be countered that just as research carried out under unethical conditions should be disregarded, so should a name of a syndrome be discontinued if described by an individual who made use of such extreme measures in its description, including gross crimes against humanity. Ethical considerations should be introduced into medical nomenclature and nosology just as they exist in patient care and research. This should include the names of individuals who themselves were involved in genocidal atrocities, even if these crimes were not associated with their research of the syndrome after whom they are named. Thus, involvement of such personalities in the deaths of the mentally ill, the medically ill, and racial minorities may be "of such enormity as to make it indefensible to use their names even though their original descriptions may have involved no wrongdoing" [1].

While this is not the first platform to bring these considerations to the medical community, the intention here is to list the eponyms associated with gross crimes of the medical community during the Nazi era that have not been adequately publicized. The aim is to provide alternative medical nomenclature, as well as examples of other eponyms named for individuals who were victims of the Nazi era, eponyms of those who protested such injustices at the time, and eponyms of those who had to flee imminent discrimination and even death. These should be remembered and strengthened, as opposed to those of the perpetrators which should be obliterated.

Eponyms of aggressors [Table 1]

Hans Eppinger

Hans Eppinger was an Austrian internist (1879-1946) who, as professor and director of a prominent internal medicine clinic in Vienna, became one of the most notorious of Nazi doctors. He

* Presented at the 18th Israeli Medical Association World Fellowship International Conference

Table 1. Eponyms of aggressors

Names	Eponyms	Recommended alternative name, and comment
Julius Hallervorden	Hallervorden-Spatz syndrome	Neuroaxonal dystrophy [1] or "Martha-Alma Disease [6] (named after sisters, the first cases described)
Hans Eppinger	Cauchois-Eppinger-Frugoni syndrome	Portal vein thrombosis
	Eppinger's spider nevus	Spider nevus
Murad Jussuf Bey Ibrahim	Beck-Ibrahim disease	Congenital cutaneous candidiasis
Eduard Pernkopf	Pernkopf Atlas of Human Anatomy	Name cannot be changed since it refers to an already published atlas, however a comment should be included in every edition or reference to it indicating the unethical origins of its content
Hans Conrad Julius Reiter	Reiter's disease	Reactive arthritis or infectious uroarthritis
	Reiter's spirochete	A treponeme variant, once known as *Treponema forans*
	Reiter's test	Complement fixation test for syphilis
Hans Joachim Scherer	Van Bogaert-Scherer-Epstein syndrome	Cerebrotendinous xanthomatosis
Hugo Spatz	Hallervorden-Spatz syndrome	Neuroaxonal dystrophy [1] or "Martha-Alma Disease [2].
	Spatz-Stiefler reaction	paralysis agitans reaction
Walter Stoeckel	Goebell-Stoeckel-Frangenheim operation	Pubovaginal fascial sling operation for stress incontinence
	Schauta-Stoeckel operation	Radical vaginal hysterectomy with lymphadenectomy
	Stoeckel's operation	Pubovaginal fascial sling operation for stress incontinence
	Kelly-Stoeckel suture	Anterior colporrhaphy
Friedrich Wegener	Wegener's granulomatosis	Idiopathic necrotizing granulomatosis or (ING) idiopathic necrotizing granulomatous vasculitis (INGV)

conducted cruel experiments on Gypsy prisoners in the Dachau concentration camp in order to test the potability of seawater [3-5]. It was reported that "subjects" became so severely dehydrated that they were seen licking the floors just to get a drop of water. With seawater as their only source of fluid, they died within 6 to 12 days. Eppinger committed suicide with poison on 25 September 1946, one month before he was scheduled to testify in Nuremberg. Eponyms in his name include Cauchois-Eppinger-Frugoni syndrome and Eppinger's spider nevus. A precedent exists regarding the withdrawal of his name as an eponym. The Working Group for Planetary System Nomenclature decided in 1976 to discontinue association of his name with a moon crater once his association with Nazi prison camps became known. Furthermore, the Eppinger Prize established in 1973 by the West German Falk Foundation was discontinued once knowledge of his wartime activities emerged. This is despite attempts by some to separate Eppinger's "objectionable" methods from his contributions to science and his personal qualities [3]. In the medical field, his name continues to flourish [5].

Julius Hallervorden

From 1 January 1938, Julius Hallervorden was professor and head of the neuropathology department of the Kaiser Wilhelm Institute for Brain Research [6]. He succeeded Max Bielschowsky, dismissed in 1933 because he was a Jew. Hallervorden was a notorious Nazi war criminal. He readily admitted that 697 brains he investigated during the Nazi period were from victims of euthanasia [6]. It is alleged that he was present at the killing of more than 60 children and adolescents in the Brandenburg Psychiatric Institution on 28 October 1940. He was reported to have removed brain material himself from euthanasia victims in a nearby extermination (euthanasia) center [1]. His now famous quote, "I accepted the brains, of course. Where they came from and how they came to me was really none of my business," says it all. Following the war, due to concerns regarding the origins of his "precious" personal pathology collection, much of it was removed from scientific use at the Edinger Institute. In 1948 he was reinstated as department head and continued to work as a neuropathologist at the Max Planck Institute in Frankfurt until his retirement. The name Hallervorden-Spatz syndrome remains: degeneration of the globus pallidus, red nucleus and substantia nigra.

Murad Jussuf Bey Ibrahim

Ibrahim (1877–1952), an Egyptian pediatrician, completed his pediatric studies in 1905 in Berlin and was later appointed professor of pediatrics. He specialized in gastrointestinal diseases in newborns and central nervous system disorders in children. Until recently Ibrahim's name was attached to the clinic for child and adolescent medicine at the Friedrich Schiller University in Jena, the "Kinderklinik Jussuf Ibrahim." After the war, a commission investigating his activities concluded that Dr. Ibrahim supported the Nazi euthanasia program. It reported that from 1941 he took an active part in the killing of sick and mentally ill children, defined by the Nazis as "unworthy life." While his name is no longer associated with the children's clinic in Jena, the international medical community has been slower to integrate these revelations and his name continues to denote a newborn skin disease (Beck-Ibrahim disease) [7].

Eduard Pernkopf

Pernkopf (1888–1955) was appointed professor of anatomy at the University of Vienna in 1928. He joined the Nazi Party in 1933 and the "brown shirts" the following year. After Hitler invaded Austria in 1938 he was appointed dean of the medical school at the University of Vienna. Pernkopf was a major instigator of the purging of Jewish staff from the medical school (153 of its 197 faculty members, including three Nobel laureates). In several of

his public speeches he voiced support for both euthanasia and the Holocaust that was yet to come. During this period as dean until 1943, he undertook the writing of his famous anatomy atlas which mapped the human body in superb detail and which many hailed as "one of the most important anatomic atlases since the work of Vesalius." In order to carry out this monumental work, Pernkopf organized for the bodies of over a thousand people executed by the Gestapo to serve as models for the atlas drawings [8]. A photograph of Pernkopf appeared in the *New York Times* on 26 November 1938; dressed in Nazi uniform, he is standing under a portrait of Hitler and addressing the faculty from which he purged its Jewish members. The illustrators of the atlas were also active Nazi party members who incorporated small swastikas and SS insignia into their signatures. These were airbrushed out of the later edition [8,9]. Pernkopf was never charged with war crimes. Several have argued that rejecting the hateful beliefs of Pernkopf and his fellow Nazis does not necessitate rejecting the elegant anatomic images they produced. It addition, it has been suggested that use of the atlas is itself the most fitting tribute to those who died for it, whether they were victims of Nazi repression or not [10]. Needless to say, many other anatomy textbooks exist today that provide significant improvements based on modern media technology. The use of such a tainted atlas has no place in modern medical usage.

Hans Conrad Julius Reiter

Reiter, a German bacteriologist and hygienist (1881–1969), completed postgraduate studies at the Pasteur Institute in Paris and at St. Mary's Hospital in London. Reiter was a fervent supporter of the Nazis [2,11]; he joined the Nazi party as early as 1932 and was an avid disciple of Hitler's doctrines [12]. This political involvement benefited his career and in 1933 he was made department director of the Kaiser Wilhelm Institute of Experimental Therapy in Berlin-Dahlem. In 1936 he was appointed director of the health department of the state of Mecklenburg-Schwerin. He continued to encourage the fanatical teaching of racial hygiene in universities [12]. In spite of his wholehearted Nazi leanings, Reiter was awarded several international honors, one of which was being designated a corresponding member of The Royal Society of Medicine in London. He continued to lecture on the international conference circuit without any harassment until his death in 1969 [11]. Several eponyms exist in his name [Table 1].

Hans Joachim Scherer

Scherer was a prominent German physician neuropathologist (1906–1945) whose creative manuscripts on the morphology and biology of malignant gliomas are well known. He is considered to be the first to clearly distinguish between primary and secondary glioblastomas and to describe growth patterns reflecting the invasion of preexisting brain tissue (secondary structures). His illustrious career was tainted by involvement in the Nazi euthanasia project. During the war, he worked at the Neurology Institute in Breslau, Silesia. Here Scherer was directly involved in neuropathological brain analyses of over 300 Polish and German children euthanized in the nearby Loben Psychiatric Clinic for Youth [13]. He thus became a willing accomplice in the murderous euthanasia program. The familial metabolic disorder, Van Bogaert-Scherer-Epstein syndrome, is named after him.

Several notable eponyms are linked to physicians associated with overt crimes during the Nazi era. In addition, there are eponyms named after Nazi era victims. These latter eponyms should be preserved and those of the former group abolished in order not to honor physicians involved in crimes to humanity.

Hugo Spatz

Spatz was a prominent German psychiatrist (1888–1969). He studied medicine in Munich and Heidelberg and worked with Nissl and Spielmeyer in the anatomy department where Kraeplin, the "father of modern-day psychiatry," used to work. He joined forces with Julius Hallervorden in 1921. Together they documented a brain with excessive iron deposits in the pallidum and reticulate zone of the substantia nigra, causing progressive rigidity. This disorder is now known as Hallervorden-Spatz disease [1]. Spatz completed his psychiatry studies in 1923. In 1937 he was appointed director of the Kaiser Wilhelm Institute in Berlin-Buch, succeeding Oskar Vogt who was forced out by the Nazis. Together with Hallervorden, Spatz embarked on a highly "productive" research period – on children killed in the euthanasia project [1]. Under Spatz's control and direction, the brain research institute collaborated with the killing institute at Brandenburg-Gorden, obtaining hundreds of brains from the mentally ill of all ages. Towards the end of the war he relocated much of his precious neuropathology collection to Munich. He was arrested as director of the Kaiser Wilhelm Institute by the U.S. military police, however he was never charged and was even invited to join the U.S. Aeromedical Center in Heidelberg where he continued to do research. Following the war, despite his overt involvement in crimes against humanity, he was awarded with a laboratory in the physiology institute in Giessen. There he conducted further research on the hypothalamus and pituitary. He later transferred to a new institute in Frankfurt-Niederrad, the Max Planck Institute, where he continued his research on primate brains. In addition to Hallervorden-Spatz syndrome, the Spatz-Stiefler reaction is named in his honor.

Walter Stoeckel

Stoeckel, an internationally acclaimed German gynecologist and obstetrician (1871–1961), served as professor and chair of the Berlin Charite Hospital's department of gynecology for approximately 25 years. Stoeckel was very sympathetic to Nazi

causes and, except on rare occasions, did not assist his Jewish colleagues when discriminated against (including dismissal). Stoeckel served as president of the German Society of Gynecology in 1933–34. He cooperated with the Nazis and was responsible for the expulsion of Jewish doctors from the Society. The most famous of them was Dr. Bernhard Zondek (1891–1966), who was dismissed after Hitler came to power in 1933 with Stoeckel's alleged collusion and without any protection extended by Stoeckel. To his credit however, one case has been reported, that of Robert Meyer (1864–1947) whose occupational status Stoeckel did maintain until 1939. Along with other German gynecologists, Stoekel supported Hitler, and in a joint effort of solidarity sent Hitler their "enthusiastic admiration" in a telegram [14]. Stoeckel was very well known by the Nazi regime and he delivered one of Magda Goebbels' (wife of propaganda minister Joseph Goebbels) six children. After the war he continued to practice, and rebuilt the destroyed clinic where he previously worked. At various points in his career he served as president of national professional medical organizations and published extensively. He was a pioneer in the development of regional anesthesia in childbirth and became the most prominent German gynecologist of his time [15]. Medical eponyms honoring his name include the Goebell-Stoeckel-Frangenheim, the Schauta-Stoeckel, and Stoeckels's operations.

Friedrich Wegener

The German pathologist Friedrich Wegener (1907–90) was a dedicated Nazi. In 1932, even before Hitler came to power, he joined the S*turmabteilung* (brown shirts), and the Nazi party a year later. In 1938 he was promoted to the equivalent rank of lieutenant colonel. While no firm proof exists, it is suspected that in his capacity as pathologist in the Lodz ghetto, Wegener may have been involved in atrocities at that site related to research. After the war he was suspected of being a war criminal and was imprisoned. However, he never stood trial and continued to work for many years [16]. The term Wegener's granulomatosis remains in common use.

Eponyms of those who supported eugenics [Table 2]

The word Eugenics means healthy breeding and was coined by Francis Galton in 1883. It transformed into a movement during the early 20th century aimed at maintaining genetically pure races as well as the sterilization of the mentally handicapped. Eugenics thus became a social philosophy advocating the improvement of human hereditary traits through social intervention. The goals of such a philosophy came to include birth control, selective breeding and genetic engineering, leading eventually to coercive state-sponsored discrimination and human rights violations, even genocide. Many physicians were at the forefront of the movement. These included well-known physicians with eponyms honoring their memory. To name a few:

Eugene Charles Apert

Apert was a French pediatrician (1868–1940) whose principal research focused on congenital deformities and genetic diseases [17]. He was a founding member of the French Society of Eugenics, of which he later became secretary general [18]. Despite his very vocal support of eugenics and euthanasia principles, there is no overt evidence that he actively participated in any atrocities propagating the cruel and unethical ideology. Well-known eponyms in his name include Apert's syndrome and Apert-Crouzon syndrome.

Table 2. Eponyms of supporters of eugenics and euthanasia

Names	Eponyms	Recommended alternative name, and comment
Eugene Charles Apert	Apert's syndrome	Acrocephalosyndactyly, type I
	Apert-Crouzon syndrome	Acrocephalosyndactyly, type II
Wilhelm His Jr	Bundle of His	Atrioventricular bundle
Robert Foster Kennedy	Kaplan-Kennedy test	Outdated test for spinal stenosis
	Foster Kennedy Syndrome	Basofrontal syndrome or ipsilateral optic atrophy with contralateral papilledema
Madge Thurlow Macklin	Curth-Macklin syndrome	Ichthyosis hystrix or congenital reticulate ichthyosiform erythroderma

Wilhelm His Jr

Wilhelm His was a Swiss internist and cardiologist (1863–1934). In 1893, he described the specialized atrioventricular muscle fibers known today as the bundle of His. He was assumed to be one of the first to recognize that the heartbeat has its origin in individual cells of the heart muscle. In September 1918 he became dean of the medical faculty in Berlin, and in 1928 was elected rector of the University of Berlin. While he was not known to be an active antisemite or Nazi sympathizer, the same cannot be said with respect to his views of the mentally ill. In his official rector's address in 1928, entitled U*ber die naturliche ungleichheit des menschen*, he emphasized the evils of contemporary culture which he believed could be eliminated by eugenic measures [19]. He became well known as one who favored war and advocated eugenics. This grew into a major movement and culminated in the program 10 years later, leading to the murder of approximately 200,000 mentally ill and "racially compromised" individuals.

Robert Foster Kennedy

Kennedy was an eminent British-American neurologist (1884–1952) who had studied at the Royal University of Ireland in Dublin. After the First World War he moved to Bellevue Hospital, New York. He was later appointed to the position of professor and chair of the department of neurology at Cornell University and in 1940 was elected president of the American Neurological Association [20]. In 1942 he published a paper in the A*merican Journal of* P*sychiatry* calling for the killing of all "feebleminded" over the age of 5 [21]. Eponyms in his name include the Kaplan-Kennedy test and Foster Kennedy syndrome.

Madge Thurlow Macklin

Macklin was an American medical geneticist (1893–1962) who made a name for herself in the research of hereditary aspects

of cancer. She was instrumental in introducing the study of genetics into medical curricula. Unfortunately, she was a passionate supporter of eugenic principles and the movement that "planned" to improve the human race by "controlling breeding." She persisted in these views despite many geneticists discarding eugenics as being scientifically unsound. She was highly active in the establishment of the Canadian Eugenics Society, serving on its executive committee between 1932 and 1934 and acted as its director in 1935. She published over twenty articles on the subject of eugenics [21]. Macklin believed that eugenics should function as an offshoot of preventive medicine and that physicians assist in the decision regarding who should be parents [23]. Curth-Macklin syndrome, a rare hereditary skin disorder, is attributed to her.

Eponyms of victims [Table 3]

While several prominent physicians with eponyms were inextricably involved either passively or actively in atrocities to humanity, other physicians with eponyms became victims of such atrocities. These eponyms should be strengthened and perpetuated. The maintenance of these eponyms would serve as a historical epithet for those who suffered and, most importantly, for physicians who should remember what the medical profession is capable of. Among them are the following (all of whom were Jewish).

Abraham Buschke

Buschke, a German dermatologist (1868–1943), completed his dermatology training at the Friedrich Wilhelm University in 1900 and was later appointed to head the department of dermatology at the Rudolf Virchow Hospital. He retired in 1933. His main interests were in the areas of syphilis and gonorrhea. He suffered greatly at the hands of the Nazis and was imprisoned with his wife in the Theresienstadt concentration camp in northern Bohemia, Czechoslovakia. There he died in 1943 from severe enteritis. He achieved fame in his time as a notable researcher, astute and caring physician and excellent teacher [24,25]. Several eponyms describing skin disorders remain in his name. These include Buschke's disease, Buschke-Fischer-Brauer syndrome, Buschke-Lowenstein tumor, Buschke-Ollendorff syndrome and Busse-Buschke disease.

Table 3. Eponyms of victims of Nazi crimes

Names	Eponyms
Abraham Buschke	Buschke's disease
	Buschke-Fischer-Brauer syndrome
	Buschke-Lowenstein tumor
	Buschke-Ollendorff syndrome
	Busse-Buschke disease
Simon van Creveld	Ellis-van Creveld syndrome
	Van Crefeld-Gierke syndrome
Lucja Frey-Gottesman	Frey's syndrome
Karl Herxheimer	Jarisch-Herxheimer reaction
Ludwig Pick	Lubarsch-Pick syndrome
	Niemann-Pick disease
	Pick's cell
	Pick's retinitis
Eugene Alexander Polya	Polya's operation
Arthur Simons	Barraquer-Simons syndrome

Simon van Creveld

van Creveld was a Dutch pediatrician (1894–1971) who in 1928 described the glycogen storage disease Cori type 1, also known as Van Creveld-Gierke syndrome. He was appointed professor of pediatrics at the University of Amsterdam in 1938, and was instrumental in establishing the first institute for hemophilia. Later, in 1941, he was expelled by the Nazis and imprisoned in a concentration camp with his wife. He was said to have demonstrated extreme courage in treating children in the concentration camp who were suffering from disease [26]. He survived the war and was reinstated in the chair of pediatrics. He continued his research, publishing close to 500 academic articles. Ellis-van Creveld syndrome, a congenital syndrome of disproportionate short-limb dwarfism, also remains in his name.

Lucja Frey-Gottesman

Frey-Gottesman was a Polish neurologist (1889–1942) and a serious student of philosophy and mathematics. She struggled for much of her career in medicine against the prejudice of being a woman and a Jewess. She was known to be modest, hard working and quiet, with remarkable creativity. She was one of the first female neurologists in academia in Europe and although her writings were not prolific, what she did accomplish was accurate and carried significant scientific weight. Soviet police killed her lawyer husband Marek after the Soviet occupation in 1939, suspecting him of being an anti-Communist. Because she was Jewish, Frey-Gottesman was relocated to the Lvov ghetto. There she continued to work as a physician in the local ghetto clinic. On 20 August 1942, the Nazis destroyed the medical clinic and murdered all the patients and staff. Although the reports are not precise, it appears that Frey-Gottesman was either murdered on that day (the entire ghetto medical staff was reported to have been killed) or relocated to the Belzec death camp. She was not heard of again and most likely was murdered by the Nazis sometime in 1942 [27,28]. Frey's syndrome, or auriculotemporal syndrome and gustatory sweating complex, remains in her name.

Karl Herxheimer

Herxheimer was a well-known German dermatologist (186–1942) who became head of the Frankfurt skin clinic in 1894 and professor of skin and venereal diseases in 1914. He remained head of the department in Frankfurt until his retirement in 1914. Despite the dangers of being a Jew living in Germany in the 1930s, he refused to leave his native country when the Nazis came to power in 1933. Ignoring his fame and achievements, the Nazis incarcerated him towards the end of 1941. On 27 August 1942, aged 81, he was taken to the concentration camp Theresienstadt where he reportedly died of hunger and dysentery on 6 December 1942 [25]. The Jarisch-Herxheimer reaction, a transient inflammatory reaction following treatment for syphilis, remains in his memory.

Ludwig Pick

Pick was a world-renowned German pathologist (1868–1944) with a variety of interests, including natural science, mathematics and music. Despite his distinguished medical career and his service in the German army during the First World War, he was relocated from his home by the Nazis and imprisoned in the Theresienstadt concentration camp where he died on 3 February 1944 at the age of 76 [29,30]. He played an important role in academic pathology, especially in the fields of genitourinary disease and melanotic pigmentation. Numerous eponyms remain in his memory, including Lubarsch-Pick syndrome, the better known Niemann-Pick disease, Pick's cell and Pick's retinitis.

Eugene Alexander Polya

Polya, a Hungarian surgeon (1876–1944), contributed significantly to the development of operative techniques that many consider to be extraordinary. He was highly regarded internationally as a surgeon of immense ability and received an honorary fellowship at the American College of Surgeons in 1939. He produced a well-known book on surgery in 1928. During the December 1944 siege of Budapest by the Russians, he was brutally murdered by a Hungarian Nazi group ("Arrowcross fascists") as he attempted to intervene in their tormenting a group of passersby. He attempted to appeal to their sense of humanity to no avail. He was shot in the head and thrown into the Danube. His body was never found. Polya's operation, a surgical procedure of posterior gastroenterostomy, remains a testament to his memory [31].

Arthur Simons

Simons was a German neurologist (1879–42) who was dismissed from his position as professor at the Berlin Charite Hospital by the Nazis in September 1933. He continued to live in Berlin, and on 3 October 1942 was deported to the Vaivara concentration camp near Reval in Estonia where he perished. He described Barraquer-Simons syndrome, a rare childhood disease characterized by loss of subcutaneous fat from the face and trunk [7].

Eponyms of those who protested [Table 4]

It is heartening that although many physicians failed to react to the injustices perpetuated by the Nazis, with many actively participating in the Nazi programs, several physicians did protest the injustices. Several of these physicians have eponyms attached to medical syndromes and deserve recognition.

Kristine Elisabeth Heuch Bonnevie

Bonnevie, a Norwegian zoologist and geneticist (1872–1948), was known for her courage in secretly coordinating the supply of food for her students and resisting the Nazis. It has been reported that after the Nazis closed the university where she was employed in November 1943, she handed out relief packets of food from her own apartment. In addition, during the war she helped the Norwegian underground movement. The congenital syndrome Bonnevie-Ullrich syndrome remains in her name.

Table 4. Eponyms of those who protested Nazi crimes

Names	Eponyms
Kristine Elisabeth Heuch Bonnevie	Bonnevie-Ullrich syndrome
Oswald Conrad Edouard Bumke	Bumke's syndrome
Franz Josef Kallmann	Kallmann's syndrome
Ernst Kretschmer	Kretschmer's paranoia, Kretschmer's syndrome
Hans Gerhard Creutzfeldt	Creutzfeldt-Jakob disease
Jules Tinel	Tinel's sign I and II
Oskar Vogt	Vogt-Vogt syndrome
Petrus Johannes Waardenburg	Klein-Waardenburg syndrome, Shah-Waardenburg syndrome, Waardenburg's syndrome, Waardenburg-Jonkers disease

Oswald Conrad Edouard Bumke

Bumke was a prominent German neurologist (1877–1950), who stated in a 1936 written protest against guidelines for abortion and sterilization that he could not find any reason for abortion or sterilization in psychiatric patients. Based on the complexity of hereditary characteristics, he believed that mental illness such as schizophrenia could never be eliminated by sterilization [32] and reported that he never cooperated with this law. It should be noted, however, that conflicting evidence does exist regarding Bumke's precise attitude to certain Nazi policies, with some reporting that he was a "champion of fascist psychiatry" [12]. He described Bumke's syndrome [33].

Hans Gerhard Creutzfeldt

Creutzfeldt was a high profile German neuropathologist (1885–1964) known to be non-supportive of the Nazis [32]. It was reported that he even saved lives in concentrations camps. A German court sentenced his wife in 1943 to four years in prison for spiteful and malicious remarks against the regime. He described Creutzfeldt-Jakob disease.

Franz Josef Kallmann

Kallmann, a German-American psychiatrist and geneticist, while appearing to be in favor of eugenics with respect to the relatives of schizophrenia patients, was strongly opposed to enforced eugenic measures and vocally expressed such beliefs. This resulted in him being banned from publishing or speaking at medical meetings in Germany. He immigrated to the USA and became one of the founders of human and psychiatric genetics [34,35]. He described Kallmann's syndrome.

Ernst Kretschmer

Kretschmer, a German psychiatrist (1888–1964), protested the Nazi takeover of Germany and in 1933 resigned as president of the General Association for Medical Psychotherapy. He was succeeded by Carl Jung. Although he cultivated a collegial interaction with the arch-Nazi Ernst Rudin [12], he reportedly opposed euthanasia. He announced on many occasions, "the psychopaths are always there, but on good days we examine them and on bad days they rule us." By supporting ethnic and class mixing, his views were in direct contradiction to those of the Nazis [36]. He

remained in Germany during World War II and surprisingly was never actively punished by the Nazis. He was one of the very few German psychiatrists who remained respected after the war [1]. He described Kretschmer's paranoia and Kretschmer's syndrome.

Jules Tinel

Tinel was a French neurologist (1879–1952) who was active in the French Resistance and later imprisoned. His son Jacques was killed by the Nazis in the Dora death camp at Neuhausen. Tinel's sign I and Tinel's sign II (tapping nerves) were described by him.

Oskar Vogt

This German physician (1870–1959) actively sought to resist the Nazis and was thus forced to relinquish his directorship of the Berlin Kaiser Wilhelm Institute in 1936. He was known as a man of great moral courage, especially for voicing his anti-Nazi sentiments [37]. He was rumored to have refused greeting those who were pro-Nazi sympathizers and to have pushed Goebbels down the stairs after Goebells wanted to fire Jews working at the institute. He and his wife were said to have harbored political refugees [38] (including a Jewish newspaper editor). Vogt-Vogt syndrome, an extrapyramidal disturbance with double-sided athetosis, is named after him.

Petrus Johannes Waardenburg

This Dutch ophthalmologist and geneticist (1886–1979) courageously opposed Nazi Germany's racist politics and published his sentiments against its racist and antisemitic policies during Holland's occupation [39]. Many spoke of him having a strong, modest and kind personality and great moral courage [40]. Several medical eponyms remain in his memory: Klein-Waardenburg syndrome, Shah-Waardenburg syndrome, Waardenburg's syndrome I and III, and Waardenburg-Jonkers disease.

Eponyms of those who fled the Nazis

The largest group of eponyms refers to individuals who fled the Nazis. Not all were Jewish, with many who opposed the Nazi regime fleeing for political reasons (such as Jurgens, Seckel and von Zumbusch). They continued to lead productive medical careers outside of Germany. Their success was Germany's loss. These individuals included the psychoanalyst Michael Balint (Balint group); the ophthalmologist Alfred Bielschowsky (Bielschowsky's disease, Bielschowsky's head tilt test, Bielschowsky's phenomenon, Bielschowsky's squint, Hering-Bielschowsky test and Roth-Bielschowsky syndrome); the surgeon and gynecologist Jacob Moritz Blumberg (Blumberg's sign); the gastroenterologist Ismar Isidor Boas (Boas' point, Boas' sign I and II and Boas-Oppler bacillus); the hematologist Rudolf Jurgens (Jurgen's pinch phenomenon); Paul Herbert Kimmelstiel (Kimmelstiel-Wilson syndrome); the neurologist Friedrich H. Lewy (Lewy body dementia and Lewy's bodies); the serologist Manfred Martin Mayer (Nelson-Mayer basal medium, Nelson-Mayer test); the Austrian dermatologist Moriz Oppenheim (Muller-Oppenheim reaction, Oppenheim's vaseline, Oppenheim-Urbach disease); the pediatrician and geneticist Meinhard Robinow (Robinow's syndrome, Robinow-Sorauf syndrome); the surgeon Rudolf Nissen (Nissen's fundoplication); the allergist Max Samter (Samter's syndrome); the pediatrician Helmut Paul George Seckel (Seckel's syndrome); the neurologist Robert Wartenberg (Wartenberg's disease II, Wartenberg's sign and syndrome); the immunologist Ernst Witebsky (Witebsky's criteria, Witebsky-substances); the serologist Hans Sachs (Sachs-Georgi and Sachs-Witebsky reactions); Julius Strasburger (Schmidt-Strasburger diet); and finally Leo Ritter von Zumbusch (Zumbusch's psoriasis).

Why confront the issue?

Perhaps the greatest accolade a physician can earn in his lifetime is praise and respect from his colleagues. Such recognition is valued above any financial success. One of the finest ways to be recognized is the legacy of one's name as an eponym. The medical profession would therefore do well to remove any honor given to the above individuals who were involved in arguably the worst chapter in the history of medical practice. Removal of such names attached to medical syndromes is not trivial, and should also be considered by the international Helsinki Committee as appropriate action under circumstances of unethical medical practice and thus rooted in proper medical nomenclature. With reference to Reiter, it has been proposed that there exists "no acceptable rationale to preserve any professional memory of Reiter and others like him within our medical culture except as a symbol of what our societal values obligate us to reject" [5]. On the other hand, the remembrance of this dark period may be ensconced in the mind of the modern practitioner with the preservation and use of eponyms of those who suffered. The memory of such a period should never be forgotten, and use of eponyms of those who were victims, with a reference to their historical base in medical educational forums, should be encouraged.

Acknowledgment. The authors wish to acknowledge the valuable assistance of http://www.whonamedit.com in the compilation of many of the eponyms referred to as well as much of the historical content relating to the individuals discussed.

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Capsule

Neutrophil extracellular traps

When circulating neutrophils are challenged by microbes, they can transform themselves into neutrophil extracellular traps or NETs, which are constructed out of chromatin (from the nucleus) and granule proteins (from the cytoplasm). These NETs grab hold of and sequester bacteria – and in doing so, they keep them within the range of antimicrobial enzymes and peptides. Fuchs and collaborators show that this process involves a new type of cell death program. After neutrophils are stimulated, the normal segregation of chromatin into regions that are actively transcribing genes and those that are inactive disappears, and the nuclei become deformed. Subsequently, intracellular membranes, including the nuclear envelope and also granule membranes, disintegrate; this leads to the mixing and assembly of the NET components, which are then released from the dying cell as its plasma membrane ruptures. This sequence of cell death is distinct from other known forms of programmed cell death and appears to involve reactive oxygen species (superoxide and peroxide) that are produced by NADPH oxidase. Chronic granulomatous disease patients are deficient in this enzyme and cannot make NETs, which may explain in part why they suffer recurrent infections. Thus, even with their last breath, neutrophils contribute to the fight against invasive microbes.

J Cell Biol 2007;176:231

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