

Iridology: A Noninvasive Diagnostic Tool for Numerous Human Disorders and Conditions

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Received: June 27, 2023; **Published:** July 28, 2023

DOI: 10.31080/ecop.2023.14.00997

Abstract

Iridology has been practiced for over a century and has recently attracted renewed attention in the era of complementary medicine. Iridology is a pseudoscientific method that examines the patterns, color, and other characteristics of the iris, the colorful portion of the eye, to diagnose health issues or identify potentially diseased or weak body parts. Numerous complementary therapists use it worldwide as an adjunct to conventional diagnostic procedures. Practitioners compare their findings to iris diagrams, which split the iris into zones corresponding to different human body areas. Iridologists see the eyes as “windows” into the body’s health. Iridology practitioners assert that the iris analysis can identify underlying conflicts, inherited vulnerabilities, and physical and mental health conditions. However, medical science has repeatedly rejected, apparently without success, the notion that disorders in different body organs are reflected in the iris by the appearance of various signs and spots. Iris does not reflect changes during anesthesia due to the drugs’ inhibiting effects on nerve impulses and in cases of organ removal. The results of the few well-controlled iridology studies indicate that the intervention is, at best, unreliable. Iridology supporters think their adversaries have a professional aversion to unconventional concepts and that future studies will establish the true significance of iridology. This article investigates, summarizes, and simplifies the understanding of iridology’s use in noninvasive medical diagnosis.

Keywords: Complementary Medicine; Iridodiagnosis; Iris; Organ Removal; Unconventional Diagnosis

Abbreviations

ACHM: American Council for Holistic Medicine; AMA: Australian Medical Association; IIPA: International Iridology Practitioners Association; MLA: Machine Learning Algorithms

Introduction

History of iridology

Iris analysis is essential not only for biometry but also for health diagnosis. The colored portion of the eye is known as the iris. Since ancient Babylon, iris examination has been a health indicator [1–3]. Several images of priests examining the eyes (iris) of pharaohs are depicted on ancient papyrus in the National Museums of Cairo and Alexandria, as well as in the temples of Luxor. According to the findings of Dimkov and Velkhover, ancient Egyptian priests were capable of diagnosing present diseases, predicting the future health condition of a patient, and identifying a person's distinguishing characteristics based on changes in the iris [4].

The very first clear presentation of iridological concepts such as *homolateral* (without using the term iridology) can be found in Philipus Meyeus's *Chiromatica Medica*, a notable treatise published in 1665 and reissued in 1670 and 1691 [1,3]. Soon after, in 1695, Johann Eltzholtz's writings debuted, and over 200 years later, in 1786, Christian Haertels wrote his dissertation *De oculo et signo* at Gottingen (The eye and its signs). Nonetheless, it was in the middle of the 1800s that modern iridology emerged. The components of the iris have been mapped during modern iridology [5].

The father of iridology, Hungarian Dr. Ignatz von Peczely, published "*Discoveries in the Field of Natural Science and Medicine: Instruction in the Study of Diagnosis from the Eye*" in 1881. The book contained a topographical map of the iris representing various areas of the body [6]. Nils Liljequist, a Swedish man, is regarded as the second "father" of iridology. He answered questions about the origins of his interest in iridology by saying, "*A man can lie, but his eyes never lie*".

Independently of Peczely, he created a more accurate and thorough iridology chart, which established the location of the digestive tract inside the ciliary belt and demonstrated that an organic defect should be seen in the eyes. The ability to detect poisonous and toxic-allergic alterations in an organism has increased due to color iris analysis, initially introduced in his foundational work on eye diagnostics (1897) [7].

Another well-known iridologist from Sweden, Pastor Felke, lived in the late 1800s. He was the one who continued Von Peczely and Liljequist's work. Felke gained notoriety for putting his iridology research on trial. During this period, Iridology was introduced to the United States of America by Henry Edward Lane, an Austrian physician. Lane's pupil, Henry Lindlahr, wrote several articles on iridology in his natural magazines. He also wrote the book *Iris Diagnosis and Other Diagnostic Techniques*.

In the early 1900s, Dr. Kritzer authored a textbook titled "*The Book of Iris Diagnosis*" and was responsible for publishing one of the first Iridology charts in America. Iridology gained popularity in the US during the 1950s when American chiropractor Bernard Jensen began teaching his method and published his maps. Today, Jensen's maps are widely used in the field. According to Jensen, iridology allows the view of remote parts of the body through nerve reflex responses on a tiny television screen provided by nature. He also asserted that iridology analysis is more reliable and provides more comprehensive body condition information than Western medicine examinations [1,5].

Hard Wolf (1979), the founder of the National Iridology Research Foundation, summarized iridology's philosophical, scientific, and therapeutic implications [8]. The constitutional method of iridology was primarily developed by Josef Deck, who passed away in Germany in 1992. *Fundamentals of Iris Diagnosis and Differentiation of Iris Markings* are two textbooks he published after spending more than 50

years researching. He also contributed to discovering several lacunae and syndromes [5]. According to data from 1996, 50% of people were against using iridology as a biomarker; however, this trend has changed over time [1].

Discussion

Definition, procedures, application, and equipment

Iridology is a type of alternative, unorthodox, holistic medicine. It is a controversial technique whose therapeutic application derives from a particular worldview and religious system and has numerous parascientific assumptions [9]. Iridology, also known as iris diagnosis or iridodiagnosis, is a science that analyses the iris for abnormal lines, spots, and discolorations to diagnose pathological and functional changes inside the organs. At the same time, Jensen describes iridology as “the science of determining acute, subacute, and chronic disorders in some bodily organs by examining particular locations in the iris” [1,10].

Iridology systematically examines the iris, the colorful part of the eye. The iris reflects the physiological state, psychological health risks, challenges, or strengths of different organs, and personality traits, much like the marks on a map [1,11]. Iridology presupposes that all bodily organs are represented on the surface of the iris by neural connections and that the malfunction of most organs is indicated on the iris, often as a pigmented lesion. The right side of the body is reflected in the right iris, and the left side in the left iris [9,11]. The higher organs, such as the thyroid and brain, are often found at the top of the iris, whereas the lower organs, such as the kidneys, are located at the bottom [12]. Seven zones of the iris can be identified from the pupil (Figure 1) [1].

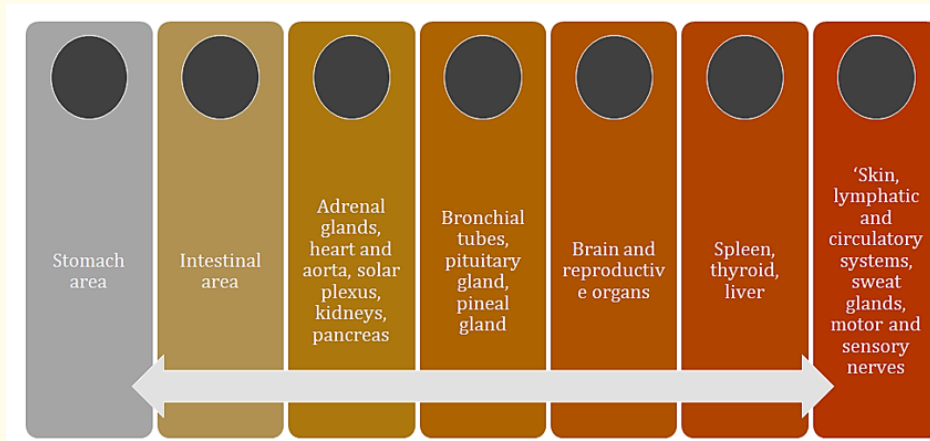


Figure 1: Zones that can be determined in the iris [1]

The diagnosis of iris provides therapeutic, preventive, and curative approaches and focuses on the early detection of diseases and their treatment to prevent them from becoming diseases [13]. Genetic traits, worsened by chemical accumulations in various places in the body, are also revealed [1]. Iridology, in the opinion of its advocates, is not intended to diagnose disease but rather to identify compromised organ functioning caused by toxic elements, inadequate nutrition, and exhaustion [14].

There are several methodological options for capturing images of the iris in iridology. These include the use of a light source to illuminate the iris during examination for more straightforward pattern and characteristic identification, an iris scope (digital or non-digital) to examine and capture the iris image, iris pens to mark areas of interest, cameras or slit-lamp microscopes, and iridology charts.

Various illumination and image recording techniques, as well as software such as Corel Draw, Photoshop, and specific software for iris images such as Iris 3D, are also used for later analysis. Iridologists examine the iris of patients for tissue changes, specific pigment patterns, and irregular stromal architecture. Additionally, physical observation can be used [1,6,12]. The application of machine learning algorithms (MLAs) as an alternative has been suggested to automate interpretation [15].

Depending on the particular brand and kind of equipment, iridology equipment might range in price. Additionally, the costs may differ depending on the region and currency (Box 1).

Box 1: An approximate cost of equipment's used in Iridology

- **Iriscope:** Range from \$1,000 to \$10,000 or more
- **Magnifying glass:** Range from \$10 to \$100
- **Light source:** Range from \$50 to \$500
- **Iris pens:** Range from \$10 to \$200
- **Iris chart:** Range from \$20 to \$100 or more, depending on the size and quality.

Iridologists practice iridology, supplementary or alternative healthcare practitioners (Certified but non-medical) [16]. Naturopaths and other holistic healthcare professionals use iridology as a supplemental practice to help them make decisions [15].

Iridologists claim that looking at a particular portion of the iris can detect which component or organ of the body has a weakness, such as being hyperactive or inflammatory. They may indicate a propensity in the patient for specific diseases, reflect previous medical difficulties, or predict future health concerns. Discrepancies in spots, colors, or lines are examples of warning indicators. The iris marks and patterns are contrasted with a chart (developed after those created by Von Peczely) that associates different iris zones with various bodily components.

The iris is divided into 80 – 90 zones on typical charts [1,12]. For example, heart problems are detected in the left iris between the 2 and 3 o'clock positions [11]. Another illustration is the kidney zone, which may be seen in the bottom portion of the iris right before 6 o'clock. The relationships between iris regions and bodily components vary slightly between the graphs [1,12]. Iridologists analyze the iris *in situ* or take high-quality color photographs of both irides [11].

Markers used in iridology

According to Segó S (2013), iris color changes (sparkles and rings) have special meaning and can even indicate if a suspected illness is acute-inflammatory, chronic-inflammatory, or allergic [14]. Some iridologists also categorize organ system malfunction based on iris color (Figure 2) [17,18].

- In addition to iris color, iridology employs various other markers that can indicate different health conditions. Some of the commonly used markers include [18–21]:
- **Pupil size and shape:** The pupil is an opening in the iris that regulates the amount of light entering the eye. Changes in pupil size and shape can be indicative of underlying health conditions. For example, a dilated pupil may indicate stress, while a restricted pupil may indicate a neurological or muscular disorder.

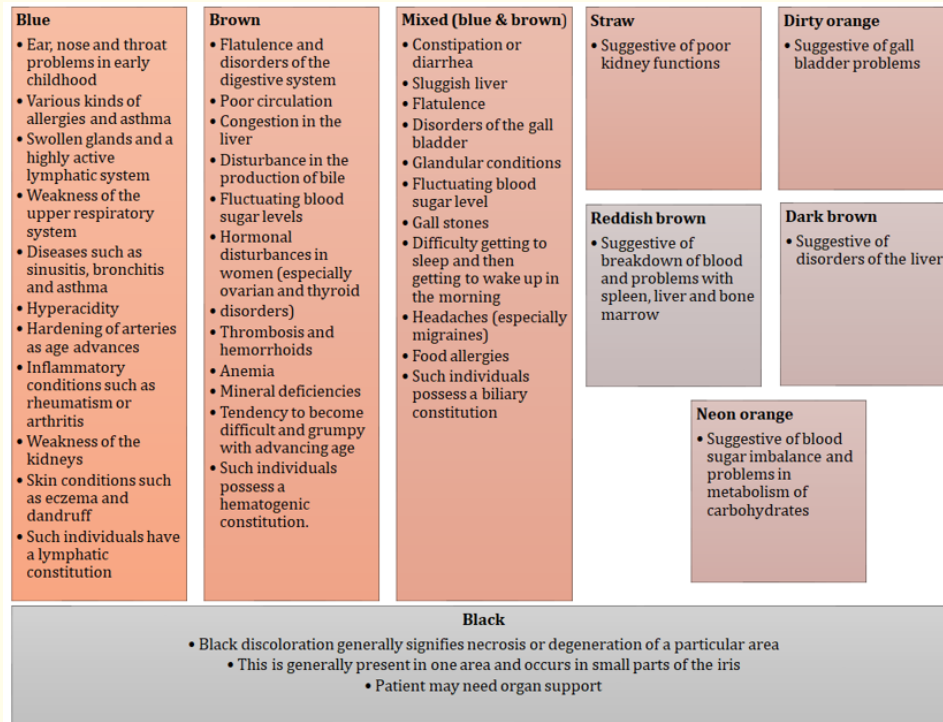


Figure 2: Health issues and eye color [17,18]

- Lacunae: These are dark spots or gaps in the iris, indicating areas of tissue degeneration or lymphatic congestion. Lacunae are associated with chronic health conditions such as arthritis, diabetes, and heart disease.
- Radial slits: These are straight lines that radiate from the pupil toward the outer edge of the iris. Radial channels indicate stress or tension in the body and are often associated with adrenal exhaustion or chronic fatigue.
- Contraction furrows are curved lines forming concentric circles around the pupil. Contraction folds signify chronic inflammation or toxicity in the body and can indicate conditions such as allergies, digestive problems, or autoimmune disorders.
- Ring formations: Rings or circles that appear in the iris are also considered markers of various health problems. For example, a ring around the iris’s outside may be associated with lymphatic problems.

In iridology, the markers analyzed in the eye’s iris are typically visual changes in the color, texture, and pattern of the iris. These changes are believed to reflect underlying health conditions in the body [11,21]. Therefore, the markers do not involve specific chemicals or structures in the iris but rather the interpretation of the visual changes in the iris.

Iridology use: supportive evidence and accrediting or training organizations for iridologists

Iridology is practiced worldwide and is widely used as an addition to other diagnostic methods by various complementary therapists [10]. According to the International Iridology Practitioners Association (previously known as the National Iridology Research Association), iridology indicates how skillfully individuals are ‘put together’, what diseases they are prone to, the causes of specific symptoms, and the emotional and behavioral aspects that influence their health [22].

The most significant benefit of iris diagnosis is preventing disease, as it allows the iridologist to identify signs of any condition before the patient presents symptoms and takes the necessary steps to maintain the organism’s equilibrium and protect it from becoming ill [13]. Figure 3 illustrates the common conditions/indications that iridology claims to identify by examination of the iris [7,9,15,22–26].

Hypertension	Endocrine disorders — Hyperthyroidism	Liver damage	Gallbladder problems	Digestive disorders
Atherosclerosis	Wilson’s disease	Hearing loss	Ménière’s disease	Diabetis
Diabetic retinopathy	Allergic sensitivity	Inflammation	lymphatic-related disease	High cholesterol
Weakened immune system	Inherent weaknesses	Biliary disease	Nutritional deficiencies and imbalances	Hormonal imbalances
	Musculoskeletal problems	Emotional and psychological imbalances	Stress	

Figure 3: Prevalent conditions and indications that iridologists claim to diagnose with iridology [7,9,15,22,24–26]

Iridology is advantageous to health professionals in several ways, according to the Iridology Institute of Southern Africa, including that it is [9,10]:

- Non-intrusive and safe.
- Economical.
- Iris indicators appear before gross pathology; therefore, iridology can provide information on critical processes before symptoms appear, making it particularly beneficial in preventive therapy.
- It offers a helpful framework for evaluating the possibilities and constraints of a patient’s future health.

According to Bamer (1996), iridology has the potential to uncover important information about an individual’s overall health, including their strengths and weaknesses, nutritional and chemical needs, location of toxins, dietary requirements and problems, nervous system, internal organ health, treatment response, and body acid levels. Unlike many other diagnostic methods, iridology can reveal a complete view of the body without requiring multiple tests [27].

Internationally, several educational institutions are affiliated with various groups of professionals that support the practice of iridology and provide training and certification to iridologists [6]. The American Council for Holistic Medicine (ACHM) has recognized the New Eden School of Natural Health and Herbal Studies, a facility that provides training in iridology. Independent organizations, such as the

International Iridology Practitioners Association (IIPA), provide iridology certification and instructional materials [28]. Other organizations of iridologists in the United States include the National Iridology Research Association, which offers training to iridologists.

The International Association of Iridologists is the premier organization for European-style iridology. It offers training programs (minimum of 72 hours in class), and the Bastyr University of Naturopathic Medicine in Seattle, Washington, offers an optional course on iridology. Iridology is generally not covered by insurance plans in the United States, but in some European countries, it is [11]. In Germany, 80% of Heilpraktiker (non-medically certified health practitioners) [11,29].

Although iridology is a popular complementary medicine technique, little scientific proof supports its usefulness as a diagnostic tool. Ernst (2000) conducted a review of 17 published studies on iridology and found that all uncontrolled studies (many of which were not blinded) concluded that iridology was a valid diagnostic tool [11].

In 1955, Jancke, an ophthalmologist, performed a chart test on 150 cases with different verified diagnoses. He compared his chart diagnosis with the confirmed diagnoses using a well-known chart. He then repeated the test after turning the iris chart to "180" and "270". His overall test scores ranged from 30 to 34%. This experimental study verifies that the large number of signs of the iris in the human eye is likely to lead to reasonable explanations for the patient's symptoms [30].

Popescu and Waniek (1986) conducted a controlled study on individuals with mitral stenosis, which provided evidence supporting iris diagnosis. This study compared the portion of the iris believed to represent the heart in 23 patients with mitral stenosis to the same number of controls matched for age, sex, and overall eye color. It was observed in the study that the iris heart region in the group with the illness was significantly darker than that of the control group [31].

Stearn and Swanepoel (2007) conducted a controlled trial to investigate the effectiveness of iridological analysis in identifying moderate to profound sensorineural hearing loss in adolescents. Fifty hearing-impaired participants and fifty normal-hearing participants, aged 15 to 19 years and matched for gender, had their irises analyzed by an experienced iridologist who was blind to their actual hearing status. The iridologist correctly identified the hearing status of 70% of the participants, with a false negative rate of 41% and a false positive rate of 19%. The sensitivity and specificity rates were 59% and 81%, respectively. A statistically significant relationship was found between the iridological analysis of hearing status and the actual hearing status ($P < 0.05$) [16].

Iridology is widely related to the field of homeopathy. Rostovsky, *et al.* (2009) surveyed to investigate the opinions of graduates from the Master of Science program in homeopathy at the University of Johannesburg and found that iridology was highly regarded as a possible additional skill for determining the patient's health state [32]. However, iridologists frequently suggest natural therapies and nutritional modifications to address any imbalances or problems detected in the iris. These suggestions may involve recommending specific diet changes and treatments [11,33–35].

Iridology use: negative, dissident, or discouraging evidence

Most conventional medical professionals and organizations dismiss any claims made by any branch of iridology as a pseudoscience with no practical use [12,36]. For example, the American Academy of Ophthalmology has stated that "there is no scientific evidence to support the use of iridology as a diagnostic tool" [37]. Similarly, the National Center for Complementary and Integrative Health has stated that "iridology practice is not supported by scientific evidence and is not considered a valid diagnostic tool by the medical community" [38].

Iridology is not recognized by the Royal Australian and New Zealand College of Ophthalmologists as a science or a diagnosis technique [39]. In addition, Yale University School of Medicine clinical neurosurgeon Dr. Steven Novella has said that "there is no credible evidence that iridology is a good diagnostic technique" [40]. Dr. Maurice Rickard, Manager of Public Health Affairs for the Australian Medical Association (AMA), also stated, "I am afraid the AMA does not have a view on iridology" [39].

Critics (including most medical practitioners) ignore iridology because the scientific study on iridology is limited and outdated. Furthermore, it does not help that where studies were performed, published results have indicated a lack of success for iridological claims [12]. Clinical evidence has not yet suggested a connection between physical disease and concurrently visible changes in the iris [36]. Iridology as a diagnostic tool “crash like a house of cards” or is not beneficial, according to a 1957 German study by Kibler and Sterzing, which took over 4000 iris images of more than 1000 people [41].

Brückner, *et al.* (1987) conducted a longitudinal study on 123 males between 1955 and 1978 to examine the effects of aging. The structure of the anterior surface of the iris was one of the parameters monitored. They discovered through repeated iris imaging over 20 years that the iris had a stable course and fine structure even in people who experienced significant changes in their health [42].

Simon, *et al.* (1987) conducted a study involving three iridologists who were asked to analyze stereo photos of patients with chronic kidney disease and those of normal subjects in a randomized order. The material comprised 143 subjects, including 48 with kidney disease and 95 normal subjects, 15% comprising cases requiring maintenance hemodialysis. The study found that the ability of iridologists to detect kidney disease was disappointingly low, with false positive responses varying between 43 – 88% and false negative responses between 12 – 43%.

The best data from the screening showed that iridology has low specificity (57%) and low sensitivity (57%) to detect kidney disease, with the predictive value for detecting kidney disease by iridology calculated to be only 2.5%. These findings conclude that iridology may pose a risk to the general public due to its limited specificity and sensitivity in identifying renal diseases [43].

Knipschild (1988) conducted a study that included 39 individuals scheduled to have their gallbladders removed the following day due to suspected gallstones. A group without gallbladder disease was also selected as a control group for the study. Five iridologists examined several slides of the irises of each group. Iridologists could not accurately distinguish people with gallbladder problems from those with healthy gallbladders. For example, one of the iridologists determined that 49% of individuals with gallstones had them, while 51% did not. This study demonstrated that iridology is not a useful diagnostic tool [44].

Münstedt, *et al.* (2005) examined the effectiveness of iridology in identifying common cancer types. An experienced iridologist examined the eyes of 110 participants, 68 of whom had confirmed cases of breast, ovarian, uterine, prostate, or colorectal cancer, and 42 did not. The practitioner was asked to provide a diagnosis for each participant without knowing their gender or specific medical information, and his diagnoses were then compared to each participant’s already established diagnosis. The study concluded that iridology did not help diagnose the types of cancer investigated [45].

Buchanan, *et al.* (1996) studied the diagnostic accuracy of iridology in systemic disease, specifically ulcerative colitis (n = 30), asthma (n = 30), coronary heart disease (n = 25), and psoriasis (n = 30). Participants in a control group were age- and gender-matched. An iridologist-approved computer program and a blinded researcher who had received training from working iridologists randomly selected and analyzed the photos.

For the presence or absence of any characteristic believed to be associated with the sick organ by iridology, no significant differences were discovered by either approach between any group and its control [21]. Due to the effect of anesthesia on nerve impulses, iridology is unreliable during surgical procedures, making accurate interpretation of the iris impossible. Consequently, it cannot provide meaningful insights into the body’s condition [27].

Contraindications for iridology use

The practice of iridology, which involves photographing or examining the eyes, is safe. However, if iridology is used primarily instead of accurate diagnostic methods, it may cause harm [46]. For example, based on the frequency of renal disease and the success rate of

the leading iridologist in the aforementioned controlled trial of kidney disease, the researchers estimated that only 2.5% of people who received a diagnosis of kidney disease from the iridologist would genuinely have the condition [43]. These false affirmations can prevent many people from receiving adequate care while suffering severe illnesses. False positives would cause unnecessary worry and the start of pointless interventions.

Since many iridologists suggest dietary supplements and herbal treatments to address the disorders they diagnose, patients can waste money on these supplements or take the risk of unfavorable side effects [46]. As such, iridology is not a recognized medical practice, and no reliable scientific studies support its claims. Therefore, there needs to be more data on contraindications to using iridology.

Future perspectives on iridology

The role of iridology in diagnosis and therapy is in doubt. Although some practitioners still use it, there needs to be more scientific evidence to support its efficacy. It is possible that iridology will not be extensively used in conventional medicine [1,11].

Nevertheless, it is crucial to remember that doctors cannot disregard the eyes as disease markers. A conventional physician will frequently inspect a patient's eyes for disease symptoms. Dilated pupils, rings around the iris, and jaundice are signs of several diseases, including Wilson's, liver, and brain dysfunction. Iridologists also frequently assert that iridology is not intended to diagnose illnesses.

Instead, it is an early detection tool to identify physical imbalances or deficiencies before they become significant medical problems. Iridology practitioners often see iridology as a preventive measure, a gauge of healing, and a source of health signals. Frequently, they aim to aid people's health, and their tips for leading healthy lives are wise and helpful. For example, if a patient is found to have yellow overlying the kidneys, this could indicate that they are not functioning correctly. It may be recommended that the patient drink more water to improve kidney function and general health.

Suppose a patient exhibits cloudiness or congestion around their heart. In that case, increasing their cardiovascular exercise routine may be advised, while the appearance of nerve rings may indicate that they need to minimize stress in their daily lives. Drink more water, eat a balanced diet, get enough sleep, and exercise - generally speaking, this is the same advice primary care physicians frequently give their patients. Thus, it is impossible to criticize iridologists' therapeutic and diagnostic guidance in and of themselves [12].

Future research on iridology could focus on several areas to better understand its potential as a diagnostic tool, such as:

- **New technology development:** Developing new technologies that can improve the accuracy and efficiency of iridology. For example, improvements in computational technology in the field of iridology will increase the clarity and detail of iris pictures and increase the ability to link iridological indicators to human health [6].
- **Large-scale studies:** Large-scale studies (using rigorous scientific methods, including double-blind controlled trials) with diverse populations will help determine a statistically significant correlation between iris markings and various health conditions.
- **Accuracy assessment:** Conduct studies to compare the accuracy of iridology diagnoses with those of conventional medical diagnostic methods. These studies could determine the validity and reliability of iridology as a diagnostic tool and provide evidence to support or refute its use in healthcare.
- **Integration into healthcare:** Exploring how iridology can be integrated into healthcare practices safely, ethically, and evidence-based. This research could involve developing guidelines for the use of iridology in healthcare settings, training healthcare professionals in its use, and determining how it can be used as a complementary tool in conjunction with the conventional medical diagnostic method.

Conclusion

There may be supporters and enthusiasts of iridology, but there is no scientific evidence to support its claims of disease diagnosis or prognosis. Studies have consistently demonstrated that iridology has no intrinsic diagnostic value and should not be substituted for reliable medical testing. However, it has been shown that some iridology practitioners provide healthy lifestyle advice that is not harmful. In any case, iridology should not replace conventional medical practices, and individuals should always consult with qualified medical professionals to diagnose and treat health issues. The future of iridology may be determined as technology advances and more rigorous scientific research is conducted, but it remains controversial and unproven.

Conflict of Interest Statement

The authors declare that this paper was written without any commercial or financial relationship that could be construed as a potential conflict of interest.

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Citation: Ngwu DC, Kerna NA, Flores JV, Pruitt KD, Carsrud NDV, Holets HM, Chawla S, Olaleye KT, Taha WTM. "Iridology: A Noninvasive Diagnostic Tool for Numerous Human Disorders and Conditions". *EC Ophthalmology* 14.8 (2023): 01-12.

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Volume 14 Issue 8 August 2023

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