

# “Pelvic Organ Prolapse Quantification System (POP-Q) - A New Era in Pelvic Prolapse Staging” (2011), by Cristian Persu, Christopher Chapple, Victor Cauni, Stefan Gutue, and Petrisor Geavlete

In 2011, Cristian Persu, Christopher Chapple, Victor Cauni, Stefan Gutue, and Petrisor Geavlete published “Pelvic Organ Prolapse Quantification System (POP-Q) – A New Era in Pelvic Prolapse Staging,” in the Journal of Medicine and Life. In their article, the authors explain the need for a reliable diagnostic method for describing the state of a pelvic organ prolapse, or a condition that can result from weakness or damage to the muscles that support the pelvic organs, sometimes leading to bladder, bowel, and sexual dysfunction. Persu and colleagues describe a previous diagnostic method, the Baden-Walker Halfway Scoring System, comparing it to the newer system, the Pelvic Organ Prolapse Quantification System, referred to also as POP-Q. By examining the benefits and drawbacks of each pelvic organ prolapse measurement and diagnostic system, the authors proposed a universal acceptance of the POP-Q system, based on its accuracy and reliability.

At the time of publication in 2011, Persu, Cauni, and Geavlete worked at Saint John Emergency Clinical Hospital, in Bucharest, Romania, where they researched and treated disorders of the urinary and reproductive tracts. Chapple and Gutue also worked to treat those disorders while working at Royal Hallamshire Hospital, in Sheffield, England. Prior to the publication of their article, the authors had previously collaborated on research investigating the diagnostic approaches and treatment methods for erectile dysfunction, which is when a man cannot get or maintain an erection during sexual intercourse. Additionally, the authors had also collaborated on a paper detailing the diagnosis of painful bladder syndrome and interstitial cystitis, both of which affect the urinary tract and may cause pain within the pelvis.

The authors split “Pelvic Organ Prolapse Quantification System (POP-Q) – A New Era in Pelvic Prolapse Staging,” into four sections to address the history of classifying pelvic organ prolapse and to explain the benefits of the new POP-Q system. In the introduction, Persu and colleagues indicate why they felt that physicians needed to institute a standardized system to diagnose pelvic organ prolapse. In the following section, the authors explain past and present methods used to describe, measure, and classify pelvic organ prolapse, such as the Baden-Walker Scoring System and POP-Q. Then, in the next section, they describe the measurements physicians use to diagnose pelvic organ prolapse using the POP-Q system. The authors state that unlike previous systems that used vague anatomical location requirements, the POP-Q system relies on the woman’s vaginal opening as a fixed point for all of the measurements. In the final section, Persu and colleagues describe other testing and diagnostic methods that physicians use before treating pelvic organ prolapse to visualize the prolapse and any changes from treatment.

In “Introduction,” Persu and colleagues explain that POP-Q is a standardized system that physicians can use to diagnose the severity of a woman’s prolapse, but that it is not universally accepted. They begin by describing POP-Q as a site-specific and objective tool to describe pelvic support, or lack thereof, in women. The authors state that the system has gained recognition by physicians worldwide and was approved by several medical societies, such as the International Continence Society, for quantifying and describing prolapses in women. However, they include that the system is not yet used worldwide, and that other systems, like the Baden-Walker Scoring System, are still in use. The authors recommend that all physicians should use POP-Q as a standardized tool to improve

treatment for women with pelvic organ prolapse.

Also in their "Introduction," the authors give an overview of pelvic organ prolapse and why it is difficult for physicians to universally quantify its extent and treatment, emphasizing the need for a standard system. They explain that pelvic organ prolapse occurs when the muscles that support the pelvic organs, known as the pelvic floor, are weakened. That allows for the pelvic organs to descend, which can result in further complications, such as bladder and bowel leakage. They state that longer lives and a larger elderly population is likely associated with the increasing number of people affected by pelvic organ prolapse outside of that caused by pregnancy. While researchers can use POP-Q to quantify pelvic organ prolapse seen during and after pregnancy, for the purposes of their article, the authors note that they are focusing on the use of POP-Q in older adults, particularly women, experiencing prolapse symptoms. The authors then describe that physicians often have difficulty diagnosing the prolapse due to nonspecific symptoms, such as a sensation of a lump or heaviness in the groin area. They continue by stating that those symptoms are difficult to correlate with a specific site or severity of the prolapse. Persu and colleagues conclude by reiterating that a standard, reliable, and well-defined system is needed to efficiently and accurately diagnose women with pelvic organ prolapse, especially as the number of affected women increases as lifespan generally continues to increase.

In "A Brief History of the Classifications," the authors give a brief background about the methods physicians have previously used to attempt to describe and quantify pelvic organ prolapse. They begin by describing the degree of anatomical deformity to classify its severity, meaning how different the woman's pelvic anatomy looked compared to what was considered normal. That required physicians to subjectively determine which pelvic organs were affected and the site of, what the authors call, the defect. Persu and colleagues state that the main problem with that method was the variability in what physicians considered normal or defective. Therefore, some physicians may have diagnosed a woman with a severe prolapse, whereas another physician would have diagnosed the same woman with a moderate prolapse. They also include that the terminology used in that method was problematic since it assumed the extent of the internal damage caused by the prolapse, such as the condition of the bladder or rectum. That means that physicians did not often consider what other structures were affected and if those interfered with the prolapse, such as if the woman had previous prolapse surgery which could alter her pelvic anatomy. The authors state that prolapses have since been classified based on the affected portion of the vagina, rather than the affected pelvic structure or organ.

Also in "A Brief History of the Classifications," Persu and colleagues describe one of two pelvic organ prolapse classification systems, the Baden-Walker Halfway Scoring System. With the Baden-Walker Halfway Scoring System, the authors describe that a physician assigns a score to six specific sites in reference to the woman's anatomy. When physicians note a change in measurements, typically fixed from what the authors call the hymen, or vaginal opening, they give that a score relative to the severity of the prolapse. Scores range from a zero, which means no prolapse, to a four, meaning maximum descent. When measuring the prolapse, physicians often encourage their patients to strain and bear down in order to provide an optimal view of the extent of the prolapse. The authors state that although the bearing down approach is more descriptive than previous methods, it can also be variable depending on who the physician is and their subjective scoring decisions. They also note that the angle at which the physician measures the prolapse relative to the location of the hymen can affect the overall score.

Then, Persu and colleagues briefly describe the POP-Q system, which a subcommittee of the International Continence Society developed in 2002 to create a useful tool for both physicians and researchers studying prolapse. The POP-Q system is based on specific measurements of the vaginal wall, in reference to the woman's vaginal opening as the fixed point. They state that the system has less diagnostic subjectivity in terms of measurement discrepancies, and was therefore considered more reliable. However, they do mention that the method takes more time and detail which has impeded it from being used worldwide in clinical applications.

In the following section, "How Does the POP-Q System Work?" the authors go into greater detail about what physicians measure and what those measurements mean under the POP-Q system. In an exam, the physician or researcher measures the distance from the woman's vaginal opening

to six defined points and three anatomical landmarks, indicated by specific points in and around a woman's pelvic region. The physician records those measurements in centimeters, assigning a negative or positive value. A negative value refers to the point being above or very close to the woman's vaginal opening, while a positive value refers to the point being below or far away from the woman's vaginal opening. Once the physician takes and records the measurements, they then assign the woman to a stage, from zero to four, depending on the severity of the prolapse. On the lowest end, a stage zero assignment means the woman experiences no prolapse, whereas a stage four assignment means the woman has a severe prolapse.

The authors then highlight the pros and cons of the system. They state that the reliability of the method and the ability to more precisely compare measurements enables researchers and physicians to determine if treatment is working correctly. However, Persu and colleagues concede that the system is more difficult to learn and that the position of a woman during the exam may affect the diagnosis. The POP-Q system also does not take into account any asymmetries in the female anatomy. Some of those limitations may have resulted in the statistic that only 40 percent of the physicians in their sample set used the POP-Q system. The authors mention that, around the time of the article's publication in 2011, a simplified system of POP-Q was in development that only measured four points, rather than the nine in the original POP-Q system.

In the final section, "Additional Testing," the authors describe several methods to quantify the symptoms and secondary effects associated with pelvic organ prolapse. One of the most significant effects of pelvic organ prolapse according to the authors is unintentional leakage of urine. They suggest how other methods of testing can identify the severity of a prolapsed bladder. The authors discuss the use of invasive procedures such as cystoscopy, which is when a physician inserts a probe into the urethra up into the bladder, where the physician can observe the bladder directly. They also suggest that another method of testing to visualize the bladder and its surrounding structures is through ultrasound, or a non-invasive method of imaging that uses sound waves to produce images of anatomic structures. They also mention that there are several types of ultrasounds, including three-dimensional ultrasounds, that can be useful in viewing structures important to pelvic organ prolapse, such as the pelvic floor muscles. One final method that the authors describe is an MRI, or magnetic resonance imaging scans. They state that those scans may be helpful, in addition to a physical exam, to decide if the woman needs surgery to treat her pelvic organ prolapse. The authors also indicate that MRIs can be useful after surgery in assessing the results of the surgery.

As of 2020, it is estimated that 50 percent of women will have some degree of prolapse in their lifetime. Researchers have noted that there are several factors that can contribute to a woman experiencing prolapse. Those factors include vaginal childbirth, pelvic surgery, older age, extreme physical activity, and genetic factors. Physicians have found that those factors can damage or weaken a woman's pelvic floor, resulting in pelvic organ prolapse. Women who experience symptoms as a result of prolapse, such as urinary or fecal incontinence, tend to seek treatment for the condition. Physicians use diagnostic systems, including POP-Q, to measure the severity of a woman's prolapse and to determine the best treatment method.

Persu and colleagues' article, "Pelvic Organ Prolapse Quantification System (POP-Q) – A New Era in Pelvic Prolapse Staging," was one of the first efforts at analyzing the systems for classifying and diagnosing pelvic organ prolapse from a modern perspective. The authors endorse the POP-Q system due to its increased precision and decreased variability. However, they do mention that it is more complicated for physicians to learn, and they recommend further work on a simplified version of the POP-Q system.

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