

FROM POLYCYSTIC OVARY SYNDROME (PCOS) TO POLYENDOCRINE METABOLIC OVARIAN SYNDROME (PMOS) – RECONSIDERING THE NOMENCLATURE IN LIGHT OF CURRENT KNOWLEDGE

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Abstract: Polycystic ovary syndrome (PCOS) is one of the most common endocrine disorders in women of reproductive age and a heterogeneous multisystem syndrome with reproductive, endocrine and metabolic manifestations. Current knowledge has called into question the appropriateness of the existing name of the disease, which is why in 2026 the international Global Name Change Consortium proposed a new term – *polyendocrine metabolic ovarian syndrome* (PMOS). The historical development of the PCOS concept, current diagnostic criteria, the reasons for changing the name to PMOS, and the possible advantages and limitations of the new nomenclature are presented. A narrative review of the literature was performed, including international guidelines, consensus documents and relevant review articles addressing the pathophysiology, diagnosis, phenotypic heterogeneity and nomenclature of the syndrome. Current evidence confirms that polycystic ovarian morphology is neither a mandatory nor a specific feature of the syndrome, while reproductive manifestations represent only one part of a complex endocrine-metabolic disorder. The proposed name PMOS better reflects the multisystem nature of the disease and may contribute to a better understanding of its metabolic and cardiovascular risk. However, due to marked phenotypic heterogeneity, the insufficient precision of certain terms and the long-standing entrenchment of the name PCOS in clinical practice and the scientific literature, the change in nomenclature continues to provoke professional debate. The change of name from PCOS to PMOS reflects the evolution of the current understanding of this complex syndrome, but it does not change the existing diagnostic criteria or therapeutic recommendations. Regardless of the renaming process, the modern approach must remain focused on women's overall health, with an integrated assessment of the reproductive, endocrine, metabolic and cardiovascular aspects of the disease.

Keywords: polycystic ovary syndrome; PCOS; PMOS; hyperandrogenism; insulin resistance; diagnostic criteria; nomenclature.

INTRODUCTION

Polycystic ovary syndrome (PCOS) is one of the most common endocrinopathies in women of reproductive age and one of the leading causes of anovulatory infertility [1,2]. It is estimated to affect approximately 10–13% of women of reproductive age, depending on the diagnostic criteria applied and the characteristics of the population studied [1,3]. The current understanding of PCOS goes beyond the concept of an isolated reproductive disorder and defines it as a complex multisystem endocrine-metabolic syndrome associated with hyperandrogenism, ovulatory dysfunction, insulin resistance, obesity, metabolic syndrome, type 2 diabetes, metabolic dysfunction-associated steatotic liver disease (MASLD),

cardiovascular risk and psychological disorders [1,2,4].

The name PCOS was introduced at a time when the characteristic ovarian morphology was considered to be the principal feature of the disease. However, current knowledge shows that polycystic ovarian morphology is neither mandatory nor specific for the diagnosis. Many women with PCOS do not have the characteristic ultrasound finding, while polycystic morphology can also be found in women without clinical manifestations of the syndrome. At the same time, the development of ultrasound technology has led to repeated changes in the criteria for defining polycystic ovarian morphology [1,5,6].

This progress in understanding the disease raised the question of whether the

traditional name still adequately reflects its essence. In 2026, the international multidisciplinary Global Name Change Consortium, with the participation of academic, clinical and patient organizations, proposed the name polyendocrine metabolic ovarian syndrome (PMOS) as an alternative to the name PCOS. The aim of the proposal is to emphasize the endocrine, metabolic and ovarian components of the disease and to reduce the confusion that the term “polycystic” may cause [7].

The history of PCOS is an example of how the development of medical knowledge can lead to the reconsideration of a historically adopted name. In 1935, Stein and Leventhal described women with amenorrhea, infertility, hirsutism and bilaterally enlarged ovaries with numerous small follicles. At a time when modern hormone assays, ultrasound and knowledge of the role of insulin in the pathogenesis of the disorder were not available, ovarian morphology was the most striking common finding and became the basis for the name of the syndrome [8].

Over the following decades, it became clear that the clinical picture is considerably more heterogeneous. Disorders of gonadotropin secretion, increased ovarian androgen production, hyperinsulinemia and insulin resistance, as well as numerous metabolic and neuroendocrine disorders, were identified. For this reason, PCOS is today viewed not only as a disorder of the reproductive system, but as a multisystem disorder with possible long-term metabolic, cardiovascular and psychological consequences [2,4,9].

The diagnostic criteria changed in parallel. The National Institutes of Health (NIH)

criteria from 1990 emphasized hyperandrogenism and chronic anovulation, while the Rotterdam criteria from 2003 included polycystic ovarian morphology as a third diagnostic element, thereby encompassing different phenotypes of the disease [5,10].

Why is the name PCOS being questioned?

The existing name can be analyzed through its three components.

The first problem concerns the term “polycystic”. The follicles visualized on ultrasound in women with PCOS are not true cysts in the pathological sense, but numerous small antral follicles associated with disordered folliculogenesis and the absence of adequate selection of a dominant follicle. The term “polycystic” is a historical remnant from the period before the development of modern ultrasonography [2,5,7].

The second problem is the term “ovarian”. PCOS is not limited to the ovaries, but involves complex interactions of the hypothalamic-pituitary-ovarian axis, the pancreas and insulin secretion, the liver, adipose tissue, skeletal muscle, the adrenal glands and other regulatory systems. The consequences of the disease include metabolic and cardiovascular disorders, as well as psychological complications [2,4,5,9].

The third part of the name – “syndrome” – is still appropriate, because PCOS represents a set of interrelated clinical, hormonal, metabolic and reproductive disorders that can manifest in various combinations and intensities. Phenotypic heterogeneity is one of its fundamental characteristics [2,5].

Table 1. Why is the name PCOS being questioned?

Part of the name	Problem	Current explanation
Polycystic	These are not true cysts	Ultrasound shows numerous small antral follicles with disordered folliculogenesis
Ovarian	The disease is not limited to the ovaries	PCOS is a multisystem endocrine-metabolic disorder
Syndrome	The term is still appropriate	It reflects the heterogeneity of clinical, hormonal, metabolic and reproductive manifestations

A particularly important problem is the variability of ultrasound criteria. Modern high-resolution probes allow visualization of a larger number of antral follicles than earlier devices, which is why the criteria for polycystic ovarian morphology have changed over time. This shows

that this feature also depends on the technology used to assess it, and not only on the biology of the disorder [1,6].

Diagnostic criteria and phenotypic heterogeneity of PCOS

The diagnosis of PCOS in adult women is still based on the modified Rotterdam criteria. After excluding other causes of hyperandrogenism and ovulatory dysfunction, the presence of at least two of the three criteria is required to establish the diagnosis [1,2,10]:

1. clinical and/or biochemical hyperandrogenism;
2. ovulatory dysfunction;
3. polycystic ovarian morphology determined by ultrasound examination or, in adult women, an elevated concentration of anti-Müllerian hormone (AMH) as an alternative to the ultrasound criterion.

AMH should not be used as a stand-alone diagnostic test, nor simultaneously with ultrasound to confirm the same criterion. When both hyperandrogenism and ovulatory dysfunction are present, ovarian ultrasound or AMH measurement is not necessary to establish the diagnosis [1].

Clinical hyperandrogenism most commonly manifests as hirsutism, while acne and androgenic alopecia, especially when they occur in isolation, have lower diagnostic specificity. For biochemical assessment, measurement of total and free testosterone, or calculation of the free androgen index, is primarily recommended. Androstenedione and dehydroepiandrosterone sulfate (DHEAS) may be measured when testosterone is not elevated, but they have lower specificity for ovarian hyperandrogenism [1].

Ovulatory dysfunction in adult women is most commonly recognized on the basis of menstrual irregularities, including cycles longer than 35 days, shorter than 21 days, or fewer than eight cycles per year. Nevertheless, ovulatory

dysfunction may also exist with apparently regular cycles, so in unclear cases ovulation can be assessed by measuring progesterone in the luteal phase [1].

In adult women, with modern ultrasound equipment and adequate image quality, polycystic ovarian morphology is defined by the presence of at least 20 follicles measuring 2–9 mm in diameter in at least one ovary. When older equipment or a transabdominal approach is used, or when reliable counting of all follicles is not possible, an ovarian volume of at least 10 mL or at least 10 follicles in a single ovarian section may be used. The dominant follicle, corpus luteum and pathological cysts are not included in the assessment [1,6].

In adolescents, the diagnosis is made more restrictively. The simultaneous presence of ovulatory dysfunction, defined according to the time elapsed since menarche, and clinical and/or biochemical hyperandrogenism is required, with exclusion of other causes. Polycystic ovarian morphology and AMH are not recommended for establishing the diagnosis in adolescence due to insufficient specificity [1].

Before establishing the diagnosis, other causes of hyperandrogenism and menstrual cycle disorders must be excluded, primarily thyroid disease, hyperprolactinemia and non-classic congenital adrenal hyperplasia. Depending on the clinical picture, Cushing's syndrome, androgen-producing tumors, hypogonadotropic hypogonadism, primary ovarian insufficiency and iatrogenic causes should also be considered. Sudden onset or rapid progression of hyperandrogenism, virilization and markedly high androgen concentrations require extended differential diagnosis [1,2,5].

Table 2. Phenotypes of polycystic ovary syndrome according to the Rotterdam criteria

Phenotype	Hyperandrogenism	Ovulatory dysfunction	Polycystic ovarian morphology (PCOM)	Common name
A	+	+	+	Full or classic phenotype
B	+	+	–	Classic phenotype without PCOM
C	+	–	+	Ovulatory phenotype
D	–	+	+	Non-hyperandrogenic phenotype

Phenotypes A and B are, on average, associated with more pronounced reproductive and metabolic disorders, while C and especially D

may have a milder metabolic profile. Nevertheless, the phenotype is not an

unchangeable category, nor can it replace individual risk assessment [5].

The existence of different phenotypes is an important limitation of the name PCOS. In phenotype B, polycystic ovarian morphology is not present, while in phenotype D there is no clinical or biochemical hyperandrogenism. Thus, no single reproductive, biochemical or morphological feature is common to all patients [5,10].

Proposal for a new nomenclature – PMOS

In 2026, the Global Name Change Consortium published the results of a multistep international consensus process aimed at reconsidering the name of PCOS. The process involved experts in endocrinology, gynecology, reproductive medicine and other fields, researchers and patient representatives, with the engagement of 56 academic, clinical and

patient organizations. Polyendocrine metabolic ovarian syndrome (PMOS) was proposed as the new name [7].

The PMOS proposal seeks to retain the initial letter P and a certain continuity with the existing terminology, while at the same time removing the term “polycystic” and emphasizing the endocrine and metabolic components of the disease. The term polyendocrine indicates the involvement of multiple endocrine systems, metabolic the metabolic characteristics, while ovarian retains the link with ovarian and reproductive dysfunction [7,9].

The authors of the proposal emphasize that the change of name in itself does not represent a change in diagnostic criteria or therapeutic recommendations. Its purpose is primarily to align the nomenclature with the current understanding of the disease and to improve communication, education and clinical awareness of its multisystem consequences [7].

Table 3. Reasons for the proposed name change

Phenotype	Hyperandrogenism	Ovulatory dysfunction	Polycystic ovarian morphology (PCOM)	Common name
A	+	+	+	Full or classic phenotype
B	+	+	–	Classic phenotype without PCOM
C	+	–	+	Ovulatory phenotype
D	–	+	+	Non-hyperandrogenic phenotype

One of the main arguments in favor of changing the name is that the name of a disease should reflect its current pathophysiological essence. PCOS involves disorders of the hypothalamic-pituitary-ovarian axis, insulin regulation, ovarian steroidogenesis, adipose tissue and liver metabolism, as well as various metabolic and vascular consequences [2,5,9].

It is particularly important that women with PCOS have an increased risk of glucose regulation disorders, type 2 diabetes, dyslipidemia, arterial hypertension, MASLD and other cardiometabolic complications. For this reason, the modern approach cannot be limited to menstrual disorders, infertility or the ultrasound appearance of the ovaries [1,2,11].

According to proponents of the change, the name PMOS could help ensure that in women with this syndrome, body weight and

waist circumference, blood pressure, glucose regulation, an oral glucose tolerance test (OGTT) when needed, lipid status and cardiometabolic risk are considered earlier [1,2].

Arguments against the name change

The PMOS proposal has not been accepted unanimously. One of the main arguments against the change is the marked heterogeneity of PCOS. In some women, reproductive manifestations and hyperandrogenism predominate, while in others metabolic disorders may be in the foreground. There are also women of normal body weight with minimally expressed metabolic disorders, which raises the question of whether the term “metabolic” can adequately encompass all phenotypes [5,9].

A similar question concerns the term polyendocrine, which is not widely established

in the existing nomenclature. Without additional explanation, it could cause new terminological uncertainties and different interpretations [7].

A further argument is that the change of name in itself does not change the way the disease is treated. Without appropriate education of physicians and patients, the new name will not automatically lead to earlier recognition of metabolic complications or to better quality of treatment [7].

Table 4. Arguments for and against the name change

Arguments for PMOS	Arguments against PMOS
It better reflects the current multisystem pathophysiology	No name can encompass all phenotypes
It emphasizes the endocrine and metabolic nature	The term polyendocrine is not sufficiently established
It reduces confusion about "cysts"	The metabolic component is not dominant in all patients
It may encourage more systematic metabolic screening	The name change does not change diagnosis or therapy
It may improve communication and education	There is a problem of historical and scientific continuity

The essential question, therefore, is not only whether the name PCOS is terminologically outdated, but whether its replacement would lead to a measurable improvement in the understanding, diagnosis and treatment of the disease. A change in nomenclature makes sense only if it contributes to better clinical practice, and is not an end in itself [7].

The role of ultrasound in the current concept of PCOS

The development of ultrasound diagnostics has particularly demonstrated the limitations of relying on ovarian morphology. Modern medicine allows precise assessment of the antral follicle count and ovarian volume, but no international diagnostic criterion requires polycystic morphology in all women with PCOS [1,10].

At the same time, polycystic morphology is not specific to PCOS and can be found in women without the syndrome, especially at a younger age. The ultrasound finding alone is therefore not synonymous with the disease [5,6].

This, however, does not diminish the importance of ultrasound. Ultrasound examination remains important in assessing ovarian morphology, excluding other ovarian disorders, assessing reproductive status and in certain therapeutic procedures [1,6]. The essential question is not whether ultrasound is important, but whether the finding in a single organ should form the basis for the name of a complex multisystem syndrome.

Historical continuity is also an important practical problem. The name PCOS has been used for almost nine decades and is present in a large number of scientific publications, clinical guidelines, databases and electronic health systems. A change in nomenclature could make it more difficult to search earlier literature, compare studies and maintain continuity of scientific communication [7].

Therapeutic implications of the name change

The change of name from PCOS to PMOS does not in itself change the diagnostic criteria or therapeutic recommendations. Treatment should still be tailored to the patient's dominant symptoms, reproductive plans and metabolic profile [1].

The basis of the therapeutic approach is lifestyle modification, including appropriate diet, physical activity and weight reduction in women who are overweight or obese. These interventions can have a favorable effect on reproductive, metabolic and cardiovascular outcomes [1].

In women who are not planning pregnancy, combined oral contraceptives are one of the basic pharmacological options for regulating the menstrual cycle and treating clinical hyperandrogenism. Antiandrogens may be used in selected patients together with appropriate contraception [1].

Metformin has an important place in women with metabolic disorders, particularly impaired glucose regulation, prediabetes or type 2 diabetes, as well as in certain patients with increased metabolic risk. Glucagon-like peptide-1 (GLP-1) agonists may be considered in selected women with obesity, especially when the goal is greater weight reduction and improvement of metabolic parameters. Inositols may have a place in some patients, although their optimal use and clinical significance require further evaluation [1].

In women who wish to become pregnant, the goal of treatment is to establish ovulation and increase the likelihood of conception. According to current international guidelines, letrozole is the first-line therapy for ovulation induction in anovulatory women with PCOS [1].

The change in nomenclature, therefore, should not lead to a change in therapeutic algorithms, but possibly to a broader consideration of the patient's needs. If the name PMOS were to contribute to greater awareness of the metabolic and cardiovascular consequences of the disease, its potential benefit would lie primarily in a change of clinical perspective, rather than in the introduction of new therapy.

Conclusion

The name polycystic ovary syndrome originated at a time when the morphological appearance of the ovaries was the most noticeable feature of the disease. Over almost a century, the development of reproductive endocrinology, molecular biology and ultrasound diagnostics has completely changed the understanding of this disorder. Today it is clear that PCOS is a heterogeneous, multisystem syndrome in whose pathogenesis complex interactions of genetic, epigenetic, neuroendocrine, metabolic and inflammatory

mechanisms participate, while polycystic ovarian morphology is only one of its possible manifestations.

The adoption of the term polyendocrine metabolic ovarian syndrome (PMOS) represents a logical attempt to align the nomenclature with current scientific knowledge. The new name emphasizes the endocrine and metabolic nature of the disease, points to its multisystem complexity and seeks to eliminate the long-standing confusion arising from the use of the term "polycystic ovaries", which is not entirely accurate anatomically and pathophysiologically.

The name change has shifted attention from the morphological appearance of the ovaries to the endocrine, metabolic and long-term health consequences of the syndrome, prompted a critical reconsideration of existing diagnostic concepts and further emphasized the need for an individualized approach to each patient.

It can be concluded that the greatest significance of the new name lies in changing the way we understand and treat this complex disorder. The modern approach to PMOS must remain focused on women's overall health, with equal attention to the reproductive, endocrine, metabolic and cardiovascular aspects of the disease.

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