

## Guideline for the Appropriate Use of FSH, LH, and Prolactin in Women

The Ontario Association of Medical Laboratories' (OAML) guidelines are intended to provide community physicians with information on the appropriate use of Follicle Stimulating Hormone (FSH), Luteinizing Hormone (LH), and Prolactin in the diagnosis of menopause, amenorrhea, and hirsutism with menstrual disorders in women. The guidelines represent the consensus thinking of a panel of experts in the field. Guidelines are, by their nature, general in focus and cannot apply in every clinical situation. They do not serve as a substitute for sound clinical judgement. **These guidelines are appropriate at the time of writing and are applicable in most clinical situations. However, if in doubt, referral to a specialist should be considered.**

### 1. Indications:

#### Menopause

##### **Definition:**

Menopause is the spontaneous end or cessation of menses (menstrual periods) for more than a year. It occurs with age as the ovaries become increasingly resistant to the gonadotropins and produce less estrogen and progesterone.

##### **Recommendations:**

If investigation of menopause/perimenopause is required, FSH is the **only** test required. LH is generally not helpful to determine this diagnosis.

The testing of Estradiol and Progesterone is **NOT RECOMMENDED** for routine diagnosis or monitoring treatment.

In patients receiving hormone replacement therapy, under normal circumstances, follow-up hormone testing is **NOT RECOMMENDED**, as results do not reflect the adequacy of treatment.

## **Amenorrhea**

### *Primary Amenorrhea*

#### **Definition:**

Primary Amenorrhea occurs in the setting of delayed puberty as defined by the lack of breast development by age 14 years, or by lack of menses by age 16 years in the presence of normal secondary sexual development, or by the lack of menses for 3 years after thelarche.

#### **Recommendation:**

In the preliminary investigation of primary amenorrhea, FSH, LH and Prolactin are recommended tests. Appropriate specialist consultation is recommended.

### *Secondary Amenorrhea*

#### **Definition:**

Secondary Amenorrhea is defined as more than 6 months without menses, after prior establishment of regular periods.

#### **Recommendation:**

Rule out pregnancy.

In the absence of pregnancy, FSH, LH and Prolactin are recommended as the most useful preliminary tests. Appropriate specialist consultation is recommended.

## **Hirsutism**

#### **Definition:**

Hirsutism is the presence of excessive facial and body hair and can be considered abnormal when it is associated with menstrual disturbances and infertility.

#### **Recommendation:**

A serum free testosterone and DHEAS are recommended. If these are abnormal or if infertility and / or menstrual disturbance are present, specialist consultation is suggested.

## **Infertility:**

Referral to a specialist is appropriate.

## 2. Limitations:

It must be realized that LH and to a lesser extent, FSH are released in a pulsatile fashion and levels vary according to the menstrual cycle.

## 3. References:

1. Laboratory Endocrine Testing Guidelines for Investigation of Amenorrhea (Without Hirsutism) and Menopause; Alberta Clinical Practice Guidelines, Alberta Medical Association, September 1996, May 1999
2. Laboratory Endocrine Testing Guidelines for Investigation of Gonadal Disorders Hirsutism; Alberta Clinical Practice Guidelines, Alberta Medical Association, September 1996
3. Backer L.C., Rubin C.S., Marcus M., Kieszak S.M., Schober S.E., Serum Follicle-Stimulating Hormone and Luteinizing Hormone Levels in Women Aged 35-60 in the US Population: the Third National Health and Nutrition Examination Survey (NHANES III, 1988-1994), Centers for Disease Control and Prevention, Atlanta, GA, USA
4. Pincus S.M., Veldhuis J.D., Mulligan T., Iranmanesh A., Evans W.S., Effects of Age on the Irregularity of LH and FSH Serum Concentrations in Women and Men, Department of Internal Medicine, University of Virginia, 1989-1995
5. Burger H.G., The Endocrinology of the Menopause, Prince Harry's Institute of Medical Research, Clayton, Victoria, Australia, Maturitas 1996; March 23 (2): 129-136
6. Rittmaster, R.S., Herperandrogenism, What is Normal? New England Journal of Medicine, 1992; 327: 194-195

## The Ontario Association of Medical Laboratories

The Ontario Association of Medical Laboratories (OAML) represents the community-based laboratory sector in Ontario.

Its mission is to promote excellence in the provision of laboratory services and, as an essential component of the health care system, to contribute to shaping the future of health care in Ontario.

The OAML encourages the highest level of professional and ethical integrity and technical excellence among laboratory owners, operators and staff in the provision of laboratory services for the benefit of the people of Ontario.

<p><b>Guidelines for Clinical Laboratory Practice</b></p> <p>The OAML, through its Quality Assurance and Clinical Laboratory Practice Committee, co-ordinates the development and dissemination, implementation and evaluation of Guidelines for Clinical Laboratory Practice.</p> <p><b>A proposed Guideline</b> is developed by a working group of the Committee with the participation of outside experts. The proposed guideline is then submitted to the Committee as a whole and to a Professional Advisory</p>	<p>There may be additional educational materials produced, if it is thought that they might be useful, and these are distributed with the guideline.</p> <p><b>The comments of end users</b> are essential to the development of guidelines and will encourage adherence. You are strongly encouraged to submit your comments on this or on any other OAML Guideline to:</p> <p>Chair Quality Assurance and Clinical Laboratory Practice</p>
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<p>Group who provide an overall review of the document. The comments of the Committee and the Professional Advisory Group are incorporated into a revision of the guideline and this draft is submitted to laboratory Medical Directors, professional associations and other representatives of end users for additional comment. The document is revised in light of these comments and submitted to the OAML Board of Directors for approval.</p> <p><b>Approved guidelines</b> are distributed to Community-based Laboratories and by them to their client physicians.</p>	<p>Committee  Ontario Association of Medical Laboratories  5160 Yonge Street, Suite 710  North York, Ontario  M2N 6L9</p> <p>Tel: (416) 250-8555  Fax: (416) 250-8464  E-mail: oaml@oaml.com  Internet: <a href="http://www.oaml.com">http://www.oaml.com</a></p>
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The OAML gratefully acknowledges the contributions of the members of the Expert Panel and others who have contributed their expertise, advice and technical support to the development and review of this guideline. This guideline has been reviewed by and comments have been received from representatives of the Laboratory Medicine, Obstetrics and Gynaecology, and General and Family Practice Sections of the Ontario Medical Association and of the Laboratory Proficiency Testing Program of the OMA.