When I became a Leader in 1986, true insufficient milk supply was considered a rarity. In recent years, however, there seems to be an increase in genuine lactation failure that has defied explanation. General associations have been made anecdotally between infertility and lactation problems, but it has often been assumed that if a woman can be helped to conceive and carry a baby, breastfeeding should be able to happen normally. Is this always true?

Jean was 25 when she had her second baby and sought help because her baby had been diagnosed as failure to thrive at two weeks of age. Her first baby was born in her teen years. When milk supply seemed to be a problem, she quickly abandoned breastfeeding. A few years later Jean wanted to have another baby, but this time pregnancy did not happen so easily. She was determined to breastfeed her second child, but, once again, her milk supply was not adequate. Further discussions revealed that Jean had been diagnosed with Stein-Leventhal syndrome.

Dawn sought help after the birth of her third baby when her son also became failure to thrive at three weeks of age. Like Jean, she had difficulty conceiving her children and had not succeeded in supporting a baby fully at breast. When asked about the cause of the infertility, Dawn mentioned that she had been diagnosed with Polycystic Ovary Syndrome.

In 1935, doctors Irving Stein and Michael Leventhal were the first to describe a syndrome characterized by polycystic ovaries, oligo, or anovulation (erratic or no menstrual cycles), and infertility that was later renamed Polycystic Ovary Syndrome (PCOS) (Stein and Leventhal 1935). PCOS is considered the leading cause of infertility in women, and researchers estimate that as many as five to 10 percent of all women may be affected by PCOS (Kidson 1998; Solomon 1999). At its core is a disturbance of the hypothalamic-pituitary-ovarian axis, and researchers now believe that insulin resistance and compensatory hyperinsulinemia play a major role in resulting problems (Hopkinson et al. 1998).

PCOS often runs in families, though women who were small for gestational age (SGA) infants, took valproate acid for seizures as teens, or experienced head trauma are at higher risk of developing PCOS. Because PCOS is a syndrome and not a disease, the combinations of symptoms are unique in each case, making identification more challenging for health providers. As a result, many women never receive a formal diagnosis (Marasco and Marmet 2000).

While breastfeeding problems have not been related to PCOS in recent medical literature, references were made to problems with breast development in some of the earliest studies. Stein and Leventhal's seminal 1935 article described "small, pale, firm," "large, flabby breasts," and "pendulous breasts"; later articles mentioned "retarded breast development" and "hypoplastic breasts" (Stein 1945). A 1972 soft-tissue radiography study of breast tissue in women with PCOS noted frequent aberrations that included hypoplasia of the breast (external appearance), hypoplasia of the gland (internal), hypoplasia of both, or hypertrophy (excess growth) of breast tissue that resulted in large breasts filled primarily with fatty versus glandular tissue (Balcar et al. 1972). A 1985 Brazilian study looked directly at tissue samples of the breast from women with PCOS and found "gross disor-
ders of the glandular parenchyma" (Fonseca et al. 1985). Ironically, such information is not reflected in articles written on PCOS in the past two decades, which may be one reason why no connections have been made between PCOS and lactation problems.

**How might PCOS interfere with lactation?**

The research is in its infancy, but it does seem clear that, for some of the women—especially those with early onset of the syndrome—there may not be enough glandular tissue to produce adequate milk. When this is evident before pregnancy, the woman is considered to have hypoplasia of the gland. Some women seem to have normal-appearing breasts that simply don’t respond to the hormones of pregnancy and so do not experience the normal multiplication of milk-making alveoli; they may describe little or no breast growth during pregnancy.

Within PCOS, low progesterone is a common problem due to infrequent ovulations. It is the corpus luteum from each ovulation that produces this hormone. Progesterone plays an important role in breast development both during puberty and during pregnancy, and a deficiency may potentially derail normal growth and development of the gland.

Prolactin is also essential to breast growth during pregnancy and milk synthesis after birth. Though prolactin levels may be normal, androgens (male hormones) are known to interfere with prolactin receptors and thus breast growth or milk synthesis may be indirectly affected.

The insulin resistance common to PCOS may also disturb critical components of breast growth and milk synthesis. Insulin is considered to be one of the primary building blocks of milk synthesis along with prolactin and cortisol. While past treatments for PCOS focused on specific symptoms, new treatment approaches using type II (non-insulin dependent) diabetes medications, such as metformin (Glucophage), are bringing improvement to insulin resistance as well as multiple hormonal imbalances within PCOS (Glueck and Streicher 2002).

**What can be done to improve milk supply for women with PCOS?**

The more severe the under-development of the gland, the poorer the prognosis for breastfeeding. Where breast tissue appears moderately developed, the potential for improvement increases. The traditional approach of more frequent feedings or pumping with an electric pump often does not make a significant difference, though it’s always worth trying. The addition of prescriptive (metoclopramide or domperidone) or herbal galactogogues has brought varying results that only rarely approach a full supply. Because they are already at higher risk for depression—both because of hormonal imbalances and situational pressures—mothers with PCOS, need to be aware that depression is a small but possible side-effect of metoclopramide.

One of the most promising potential therapies is the use of metformin. Trial cases have shown improvement when severe hypoplasia was not present (Gabbay 2002). Two studies recently examined the passage of metformin into human milk and concluded that it represented an insignificant risk to the infant, paving the way for mothers who desire to try this option (Hale et al. 2002; Gardiner et al. 2003). Some health care professionals are trying galactogogues in conjunction with metformin for the best possible effect, depending upon the individual situation.

The inability to fully nourish her baby at the breast often comes as a shock to the new mother. For the woman who has struggled through infertility, another unexpected pothole in the road to motherhood can be devastating, especially when she had no idea that she might be at risk for lactation problems. Further compounding her trauma may be the mistaken judgments of others that the mother is simply not trying hard enough, or the mother herself may assume that she is somehow to blame.

**How can LLL Leaders help?**

Some mothers may initially be in denial that their breasts may not be doing their expected job and may need gentle help in facing the reality of their situation. For others, there may be feelings of guilt and self-condemnation, especially if the problem first becomes evident by the baby’s inadequate growth. Tears of grief are common, and there is sometimes anger at the health care providers and educators who taught her how important breastfeeding was but did not warn her about such potential problems.

This is where La Leche League Leaders can shine. So often the resources brought to the situation concentrate largely on the

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**Facts about Polycystic Ovary Syndrome**

Fifty percent of affected women are obese, and they frequently experience symptoms such as hirsutism (excessive body hair), adult acne, and male-patterned balding caused by excess androgen production (hyperandrogenemia).

High cholesterol levels are common along with low progesterone, elevated luteinizing hormone to follicle stimulating hormone ratios (LH:FSH), low sex-binding globulin hormone (SBGH), insulin resistance, and compensatory hyperinsulinemia.

As a result of the multiple hormonal imbalances, cysts often develop on the ovaries (hence the name, polycystic ovary syndrome) and irregular or absent menstrual cycles contribute to the high rates of infertility. In addition, miscarriages and pregnancy complications occur more often, and PCOS women are prone to developing Type II (non-insulin dependent) diabetes in their 30s or 40s while experiencing higher rates of heart disease and gynecological cancers later in life.
physical aspects of breastfeeding to the neglect of the emotions of the mother. Women experiencing any degree of lactation failure are facing a loss that is not generally appreciated in our culture, and we are in a key position as breastfeeding supporters to extend empathy and help assuage some of the grief. Sometimes, affected women need to hear that they are not at fault for what has happened and that they have indeed done their very best, whatever the outcome. If the problem first became evident by infant weight loss, a mother may begin to view her efforts to breastfeed as "selfish" and question her mothering ability. As Leaders, we can point out her care and love for her baby, as reflected in her having sought out help. Active listening skills can help the mother not only to work through her feelings, but also to sort through her options and develop a plan that will best serve her baby and her family.

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As we work with mothers who are reporting problems with milk supply, it is important to take the time to listen and collect all of the information necessary to differentiate between these intrinsic problems and problems that are secondary to other issues. When a primary lactation failure is evident, great sensitivity is needed in guiding the mother through the process of deciding how she wants to proceed. Remember that she is facing a complex situation that does not offer a guarantee of success. As Leaders and part of the mother's health care team, we can offer unique support and understanding without assuming that normal lactation will follow for every woman who has been helped to conceive and carry a baby.

**Editor's Note:** Diagnosing medical conditions or syndromes like PCOS is beyond the scope of an LLL Leader. The knowledge and awareness of such conditions, however, is an important part of each Leader's continuing education. A Leader who is sensitive to a mother's situation and feelings can offer support and empathy that the mother may not receive otherwise. Any mother experiencing genuine lactation failure should be encouraged to work closely with her health care team.

**References**


**What do you want to see in future issues of LEAVEN?**

Suggestions for feature articles can be sent to the Development/Contributing Editors: Carole Wrede (EditorLV@lli.org); Kathy Koch (pakoch@verizon.net); and Norma Ritter (LLLnormar@gmail.com).
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