What is the best way to evaluate secondary infertility?

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Evidence-based answer

The work-up for secondary infertility—the inability to conceive after 1 year of regular unprotected intercourse for a couple who have previously had a child[1]—should include a history and physical exam for both patients, plus evaluation of ovulation, semen analysis, and imaging of the uterus and fallopian tubes (strength of recommendation [SOR]: **B**, based on cohort studies).

Check the male partner for varicoceles: they are the leading cause of male secondary infertility. For the female partner, a hysterosalpingogram is an effective first test in the initial evaluation of the uterine cavity and tubal patency (SOR: **B**, based on cohort studies). Laparoscopy is indicated where there is evidence or strong suspicion of endometriosis, adhesions, or significant tubal disease (SOR: **B**, cohort studies). Routine postcoital testing is unnecessary (SOR: **A**, randomized controlled trial and cohort studies).

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Clinical commentary

Simple steps may reveal treatable causes

Many times, family physicians are too quick to refer couples with infertility problems. Conception and early pregnancy require 6 basic elements of good quality: mucus, egg, sperm, timing, anatomy, and hormonal support. Couples that learn how to chart their cycles can provide physicians with valuable information such as bleeding pattern, quality of mucus, and luteal phase length. This can help the couple to focus on their time of maximal fertility.

A good working relationship with an obstetrician and urologist is important for more complicated workups and treatments. A couple with secondary infertility has shown that things were once working right; it's up to the physician to determine what may have changed since that success.

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FAST TRACK
Check the male partner for varicoceles, the leading cause of secondary infertility in men

Evidence summary

The prevalence of infertility in the US is approximately 15% to 17%.[2,3] Secondary infertility may comprise 80% of these cases, though reports vary.[2] Begin the evaluation of secondary infertility with a thorough history and physical, as outlined in the **TABLE**), followed by semen analysis and evaluation of ovulation.[1,3,4]

Evaluate the male partner for varicoceles

The semen sample can be taken after the patient abstains from ejaculation for 2 to 6 days. Analyze the sample for volume,

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TABLE

Secondary infertility? Here's what to cover in the history and exam

HISTORY	
FEMALE	**MALE**
Prior pregnancies and complications; fertility in other relationships	Sexual dysfunction or impotence
Menstrual history: Age at menarche, cycle length, regularity, characteristics, dysmenorrhea	Testicular surgery, history of mumps, prior infections
	BOTH
Gyn history: Infections, prior surgeries, endometriosis, cervical dysplasia, DES exposure, prior contraceptive use	Duration of infertility
Symptoms of thyroid disease, pelvic pain, abdominal pain, galactorrhea, hirsutism, and dyspareunia	Previous evaluations and results
Exercise and dietary history, presence of eating disorder	Frequency of intercourse and use of lubricants
Current medications	History of chemotherapy, radiation, and other environmental and occupational exposures like alcohol and drugs
Occupational history	Preconception counseling
Breast exam / secretions	
PHYSICAL	
FEMALE	**MALE**
Genitourinary exam: Vaginal/cervical abnormalities or discharge, uterine size and shape, adnexal mass or tenderness	Genitourinary exam: testicular size and consistency, location of urethral meatus, presence of varicocele
Weight: body-mass index >29 or <19	Weight / body habitus
Thyroid enlargement, nodules, or tenderness	Hair distribution
Presence of hirsutism	Breast development
	Digital rectal exam

pH, sperm concentration, motility, and total number. If the sample is abnormal, repeat the analysis within 3 months.[1,5]

Evaluate the male for varicoceles. A retrospective chart review compared 285 men with secondary infertility with 285 men with primary infertility. Varicoceles were the cause of secondary infertility in 177 (69%) of men with secondary infertility compared with 128 (50%) of men with primary infertility ($P<.0001$).[6]

Order tests to evaluate ovulation

To evaluate ovulation, look at menstrual history, serum progesterone, and urine luteinizing hormone (LH).[1,3,4] If the woman has signs of androgenic dysfunction, draw tests for LH, thyroid-stimulating hormone, follicle-stimulating hormone (FSH), testosterone, prolactin, and 17-hydroxyprogesterone. A woman with irregular menses should have her LH and FSH checked.[1]

A hysterosalpingogram is an effective first test in the evaluation of the uterine cavity and tubal patency.[1,7,8] If the woman has comorbidities—such as a history of pelvic inflammatory disease, previous ectopic pregnancy, or endometriosis—then laparoscopy should be the initial test.[1,3] One study demonstrated increased diagnostic yield with a combined approach of hysteroscopy and laparoscopy, in communities where the risk of pelvic infection was great.[9]

Routine postcoital testing is unnecessary.[10] A randomized controlled trial compared 227 couples who received the postcoital test with 217 couples who did not. Routine use of the postcoital test

led to more tests and more treatments but had no significant effect on the pregnancy rate.

Recommendations from others

According to the Royal College of Obstetricians and Gynecologists:[1]

1. The use of basal body temperature charts to confirm ovulation does not reliably predict ovulation and is not recommended.
2. The routine measurement of thyroid function should not be offered.
3. Women should not be offered an endometrial biopsy to evaluate the luteal phase because there is no evidence that medical treatment of luteal phase defect improves pregnancy rates.
4. Women who are not known to have comorbidities (such as pelvic inflammatory disease, previous ectopic pregnancy, or endometriosis) should be offered hysterosalpingography to screen for tubal occlusion.
5. Women who are thought to have comorbidities should be offered laparoscopy and dye so that tubal and other pelvic pathology can be assessed at the same time. ■

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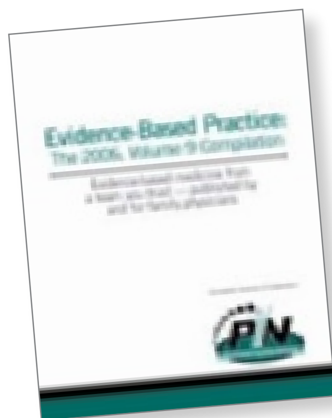

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