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# PCOS IN ADOLESCENTS: EARLY DETECTION AND INTERVENTION

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# PCOS IN ADOLESCENTS

- **6-10% of all REPRODUCTIVE AGE women (includes teens)**
- **Under diagnosed in teens**
- **Symptoms may mimic normal puberty**
  - Weight gain
  - Insulin resistance
  - Irregular periods
  - Acne
- **Disease is often EVOLVING and girl may not meet diagnostic criteria YET or may have features of PCOS that resolve with time**

# DIAGNOSTIC CHALLENGES

- Laboratory references for ADULT women
- Must rule out other conditions (adrenal disorders, tumors)
- May never have period
- Ultrasound findings not helpful
  - PCOS-like ovaries seen in other diseases (ED, CAH, prolactin)
  - Criteria based on transvaginal ultrasounds (not done in teens)
  - Ovarian size/shape/cysts are different in teens
  - Larger ovaries with more cysts may be NORMAL
  - Need to establish age-based criteria

# DIAGNOSTIC CHALLENGES

- Symptoms of PCOS are evolving and may not be readily apparent in adolescents
- Because the diagnosis has significant lifelong implications—including testing, treatments, and related anxiety, diagnosis is made with caution
- When diagnosis unclear, recommend:
  - Education
  - Treatment of specific symptoms if needed
  - Follow up

# DERMATOLOGIC ISSUES

- Hirsutism—terminal hair in MALE pattern

- Does NOT correlate with

- Racial/ethnicity

- Acne—more severe during menstrual periods



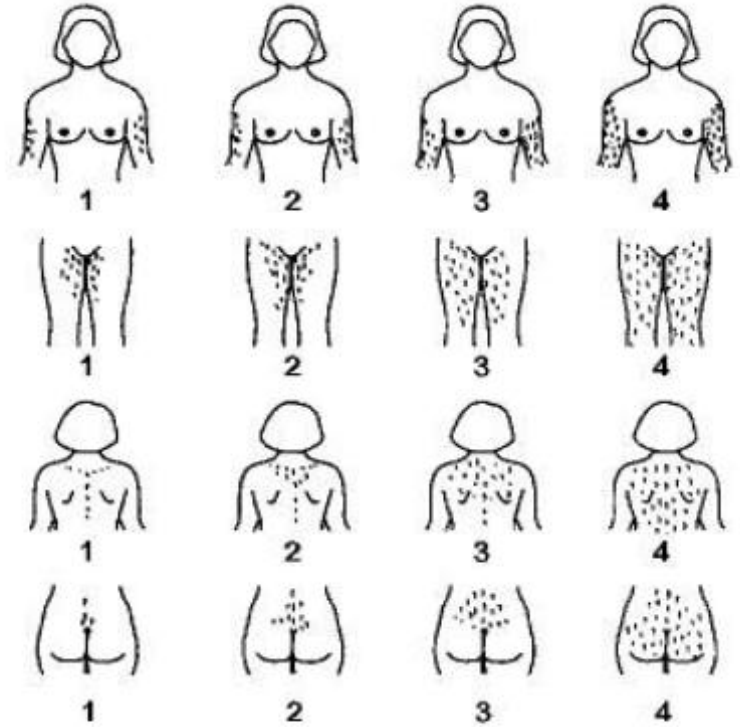
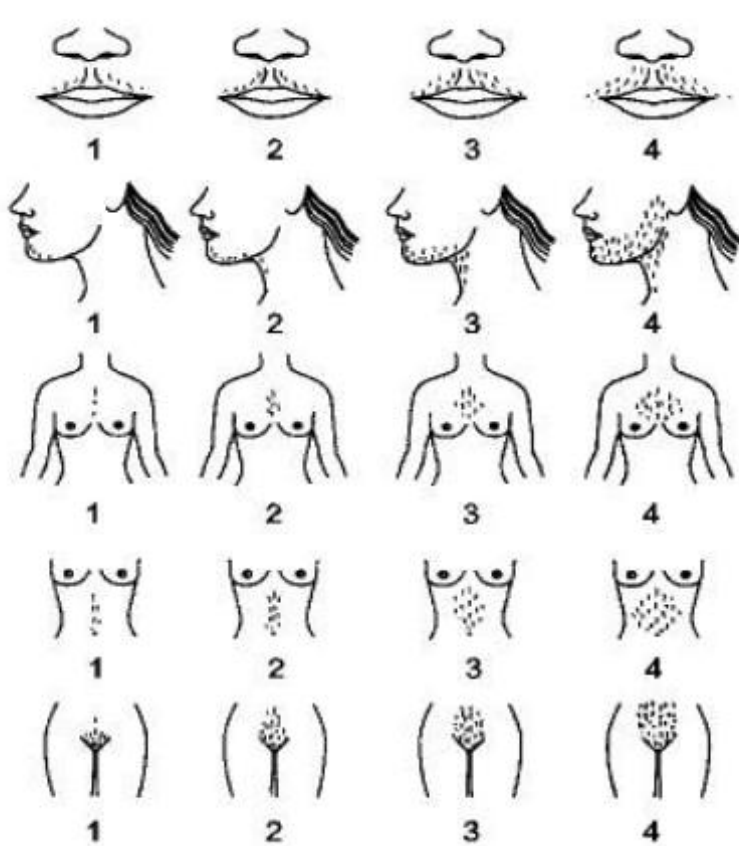
levels but with IR

1, worse with


- Acanthosis nigricans (marker of insulin resistance)
- Scalp hair thinning in male pattern

*Cause of embarrassment, poor self-esteem in girls*


# HIRSUTISM SCORING (MODIFIED FERRIMAN GALLWEY)



# GYNECOLOGIC ISSUES


- Anovulation: can have “regular” periods, increased frequency, heavy bleeding
  - Oligomenorrhea (infrequent periods): >34 day cycles or <10 cycles/year
  - Amenorrhea (NO periods)—primary or secondary
  - Degree of menstrual dysfunction also correlates with IR
  - Infertility—treatments available
  - CAN have spontaneous pregnancy
- 

# METABOLIC RISK

- PCOS increases risk compared to same weight/age
  - If overweight, even HIGHER
  - Insulin resistance worsens symptoms/high androgens worsen insulin resistance
  - Risks: Type 2 diabetes, cholesterol problems, fatty liver, high blood pressure, sleep apnea, heart disease
  - Screen for these at diagnosis and every year
- 



# PSYCHIATRIC RISKS

- Increased depression and anxiety
  - Poor body image due to: weight, hirsutism, acne, and fertility concerns
  - Eating disorder risk
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# TREATMENT CHALLENGES


- Oral contraceptives (birth control pills): growth suppression, social stigma (parents/child), side effects
- Metformin: side effects (diarrhea, bloating, nausea)
- Spironolactone: birth defects if pregnancy
- Lifestyle interventions (diet/exercise): need family support, financial, social barriers, MOTIVATION

# GOALS OF THERAPY TO TREAT/PREVENT:

- Dermatologic: acne, hirsutism, hair loss
- Menstrual dysfunction: dysfunctional bleeding, endometrial hyperplasia/cancer
- Metabolic disease: insulin resistance/diabetes, hypertension, cholesterol
- Infertility (future)

*Usually requires combination of treatments*

# RESEARCH

- **Find the CAUSE**
    - Genetics/epigenetics
    - Microbiome
    - Metabolomics
  - **Early diagnosis**
    - Premature adrenarche
    - SGA
  - **Treatment/prevention**
    - Diet
    - Medications
    - Others?
- 

# CHOP ADOLESCENT PCOS CLINIC

- **Multidisciplinary, all pediatric providers**
  - Endocrinologist
  - Dermatologist
  - Gynecologist
  - Nutritionist
- **Clinical research team**

**Patients/families meet with multiple providers at one clinic visit to have all their needs met**

**Focus on education about the condition for patients/family**



To make an appointment, call  
Endocrinology at 215-590-3174 or  
email [endoappts@email.chop.edu](mailto:endoappts@email.chop.edu)

**ASK FOR THE PCOS CLINIC**

