

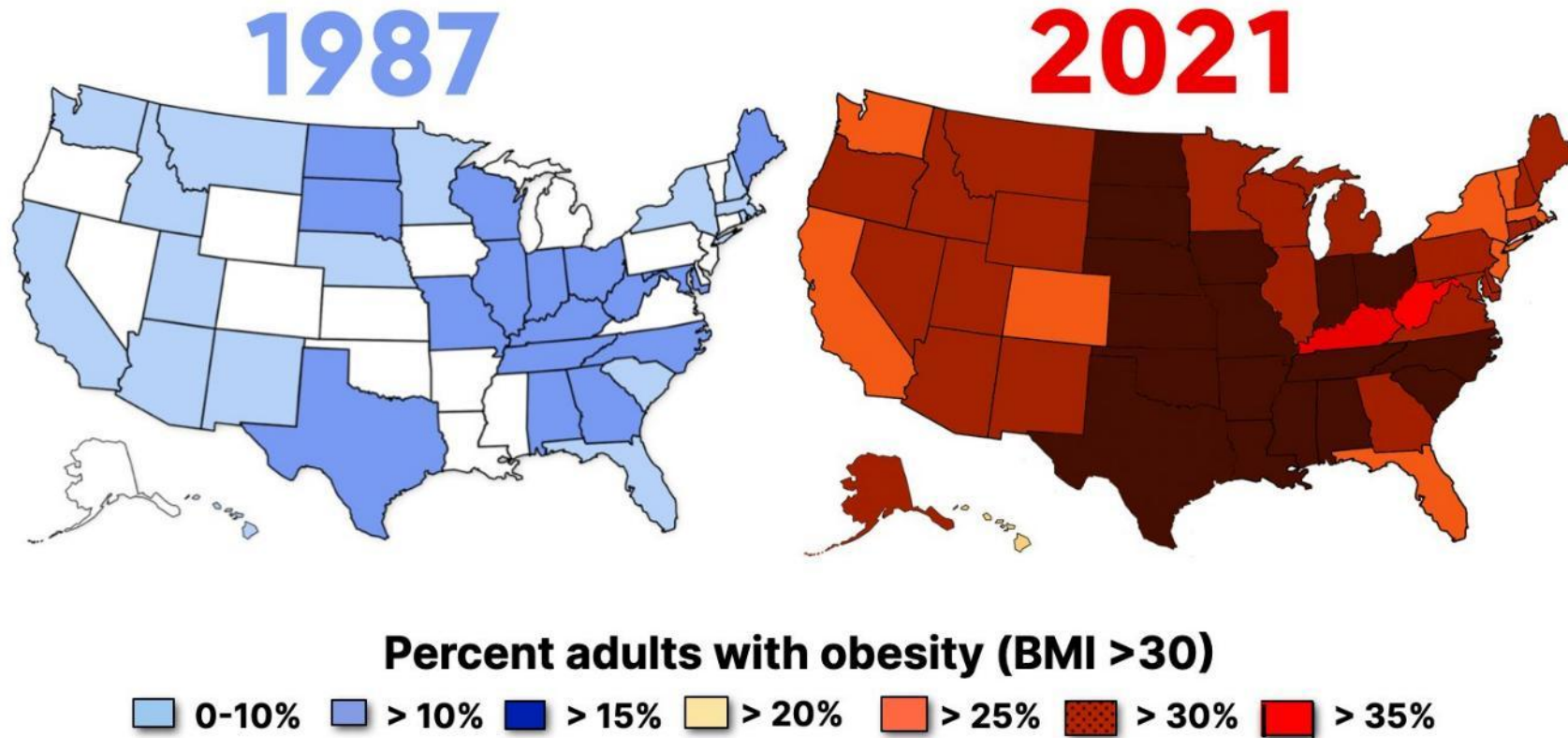


THE UNIVERSITY OF
TENNESSEE
HEALTH SCIENCE CENTER.

Morbid Obesity in the GYN Space: It's a Big Deal

John O Schorge, MD, FACS

USA obesity rates





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EDITORIAL

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Editorial: Global Obesity Rates Continue to Rise with Challenges for New Drug Treatments Including GLP-1 Receptor Agonists

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Conflict of interest:

None declared

Abstract

On March 4, 2025, the World Obesity Atlas 2025 was published by the World Obesity Federation and reported that the total number of adults living with obesity is now projected to increase by more than 115% between 2010 and 2030 (from 524 million to 1.13 billion). On May 9, 2025, an analysis of the global market for weight-loss medications identified the exponential growth of obesity drugs, with a previous market projection for 2035 of \$105 billion, is now revised to \$150 billion. Several emerging oral compounds for weight reduction are currently under clinical evaluation, including oral glucagon-like peptide 1 (GLP-1) receptor agonists. The US Food and Drug Administration (FDA) has recently accepted a new drug application for oral semaglutide, which, if approved, will be the first oral drug authorized for long-term weight management. However, because efficacy and safety data have mainly come from clinical trials, long-term effects on weight loss, treatment adherence, and side effects require long-term and real-world evaluation. Increasing demands and drug costs also drive the production of compounded versions (copycat drugs), which have escalated for GLP-1 receptor agonists, with products without quality and safety evaluation. This editorial aims to provide an update on the global challenges of increasing rates of obesity and the demands for therapeutic approaches to weight loss, including GLP-1 receptor agonists.

CONCLUSIONS:

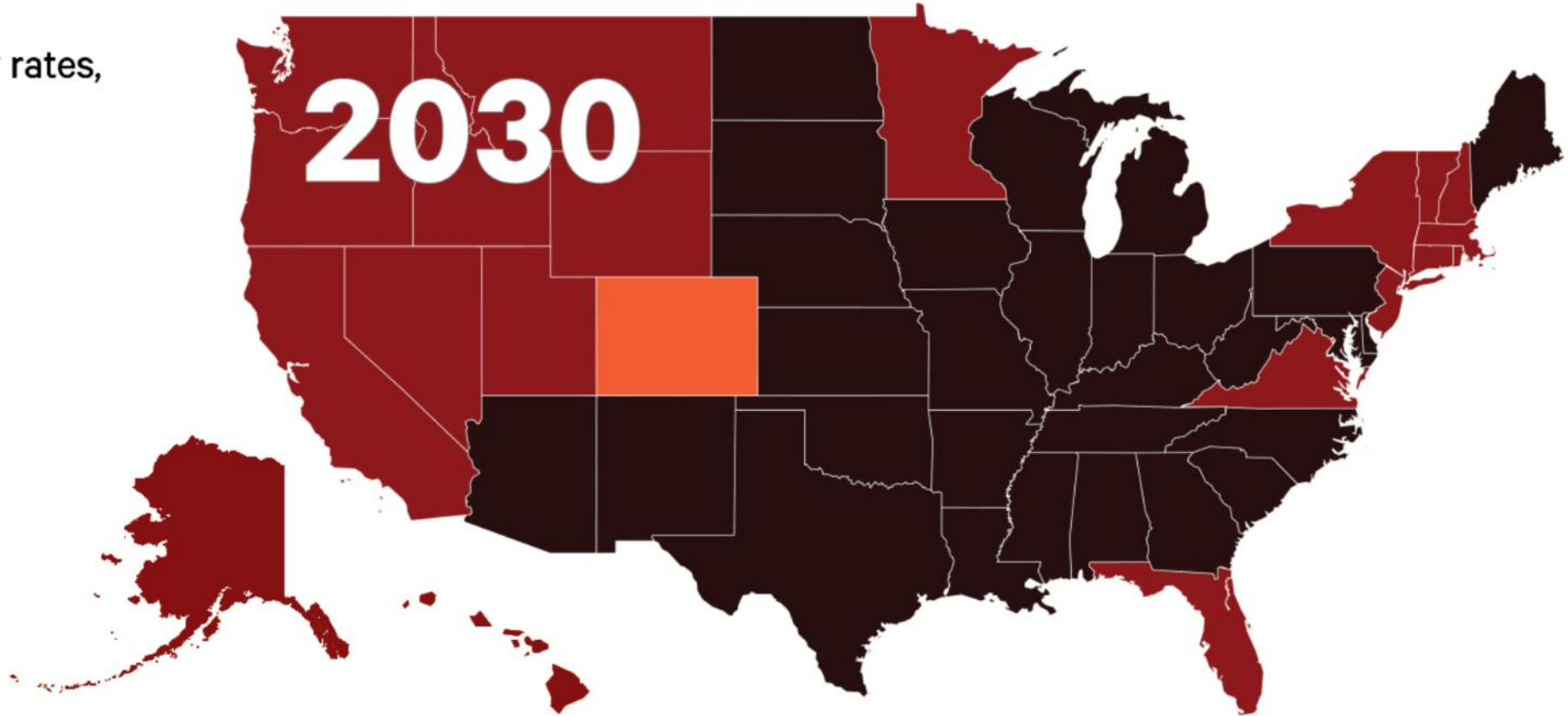
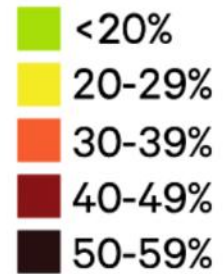
Obesity is now a global public health emergency.

The etiology of obesity is multifactorial, involving genetic predisposition, environmental factors, and behavioral aspects, which means that a personalized approach would be more effective in prevention and treatment.

Although obesity drugs, including GLP1 receptor agonists, are in high demand, they would not be expected to lead to long-term weight loss and weight control when used alone, even if costs were not prohibitive.

Nearly half of Americans will have obesity by 2030

U.S. Obesity rates,
1990-2030



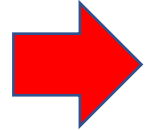
Childhood Obesity Intervention
Cost-Effectiveness Study

Ward ZJ, Bleich SN, Cradock AL, Barrett JL, Giles CM, Flax CN, Long MW, Gortmaker SL. Projected U.S. State-Level Prevalence of Adult Obesity and Severe Obesity. N Engl J Med. 2019;381:2440-50. doi: 10.1056/NEJMsa1909301

Educational objectives

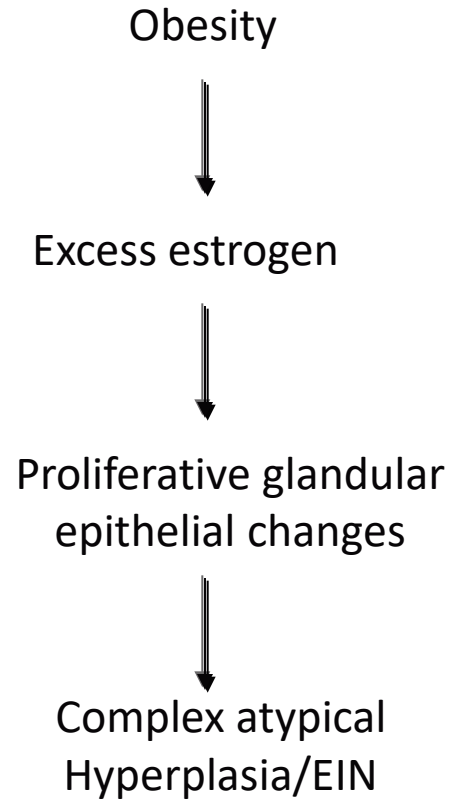
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2. Become familiar with current guidelines for the workup and treatment options for gynecologic disorders in this population
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4. Explore the plethora of widening non-surgical options to avoid major surgery in this high-risk population

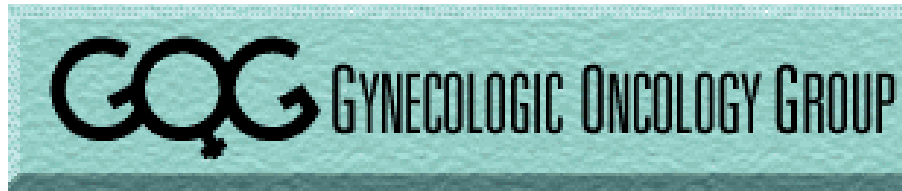
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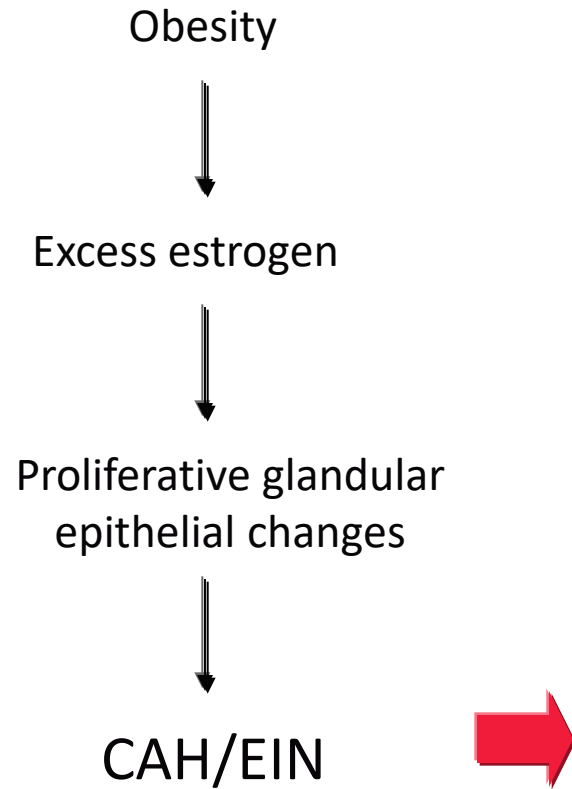
Getting to uterine cancer



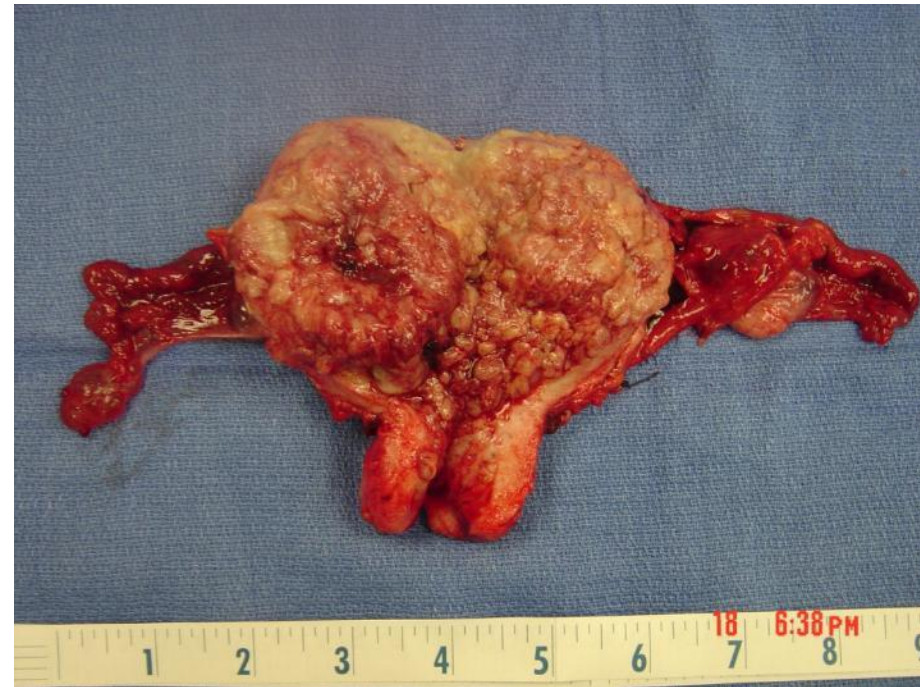


- Prospective cohort study
- 306 patients with biopsy diagnosis of complex atypical hyperplasia/EIN
- Immediate hysterectomy
- Rate of endometrial cancer: **43%**

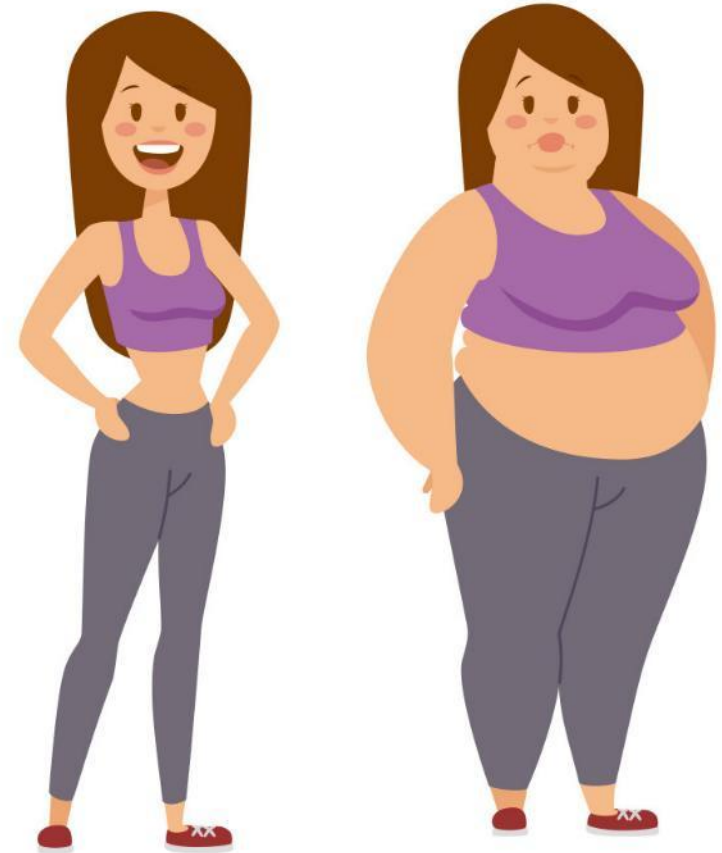
Getting to uterine cancer



Cancer

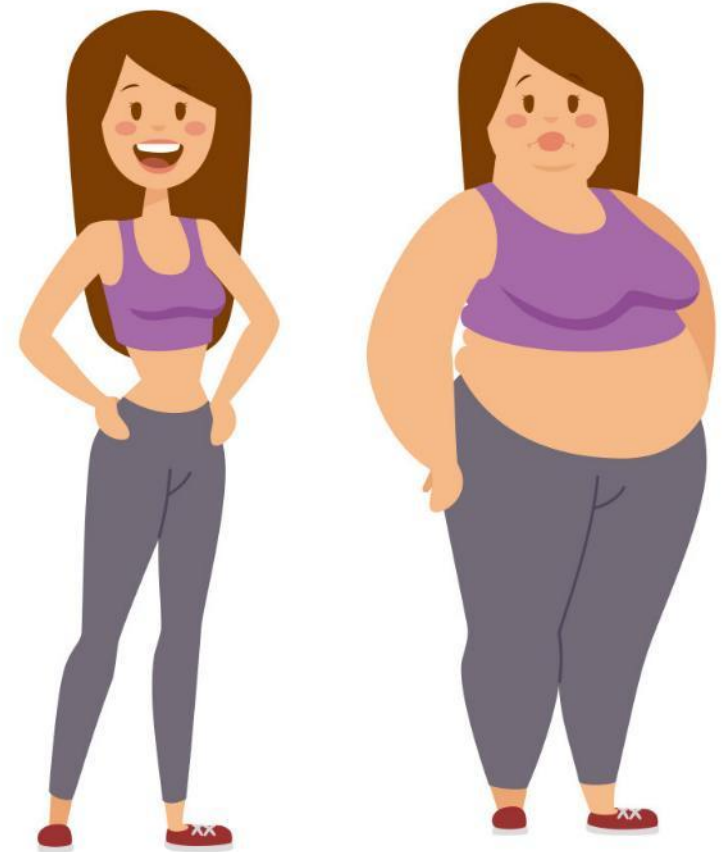


Lifetime risk general population: 3%



Lifetime risk general population: 3%

Lifetime risk with BMI 40+ = **10-15%**



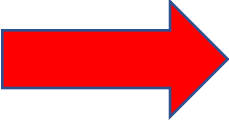
Lifetime risk general population: 3%

Lifetime risk with BMI 40+ = **10-15%**

Lifetime risk BMI 50+? 60+?



Common symptoms

1. Postmenopausal bleeding
2. Postmenopausal bleeding
3. Postmenopausal bleeding
4. Postmenopausal bleeding
5. 

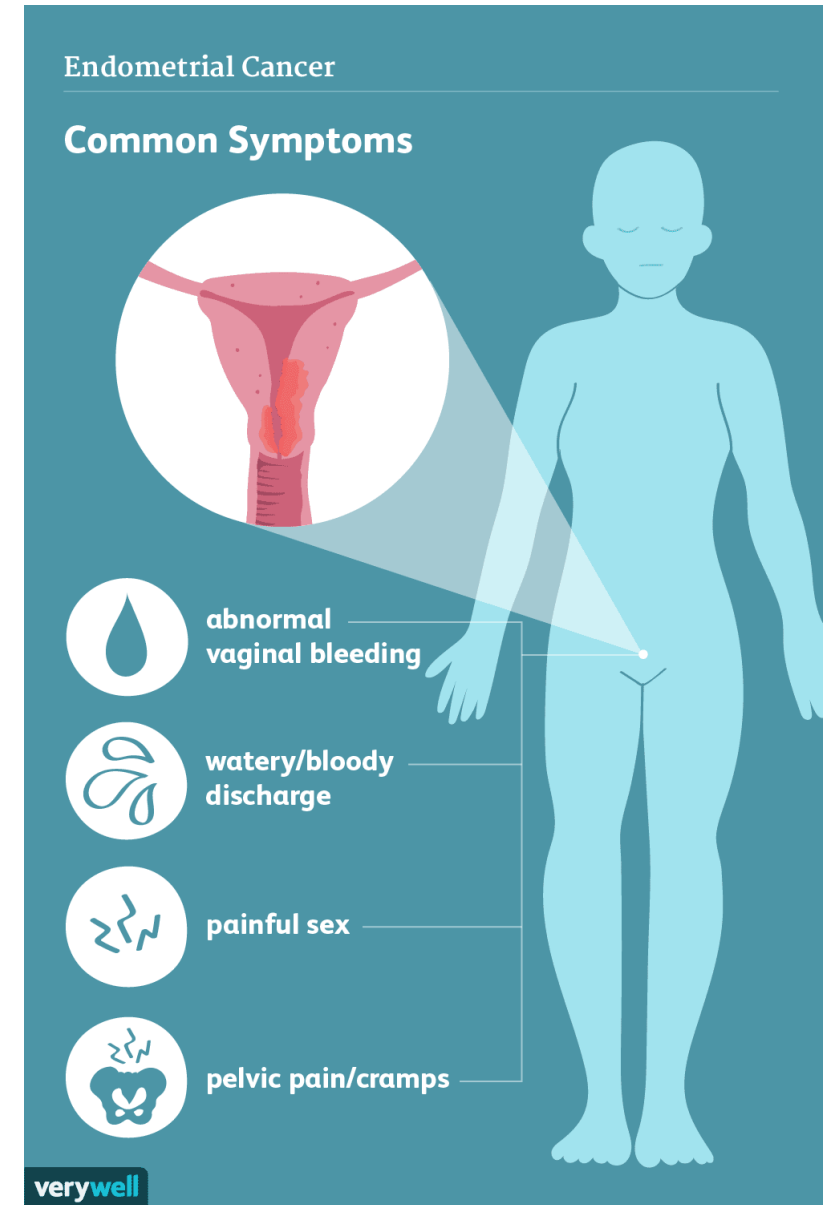


Premenopausal: **15 – 20% diagnoses**

Symptomatic women with:

BMI > 30 are 5-fold increased risk

BMI > 40 are 20-fold





The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

COMMITTEE OPINION

Number 557 • April 2013

Committee on Gynecologic Practice

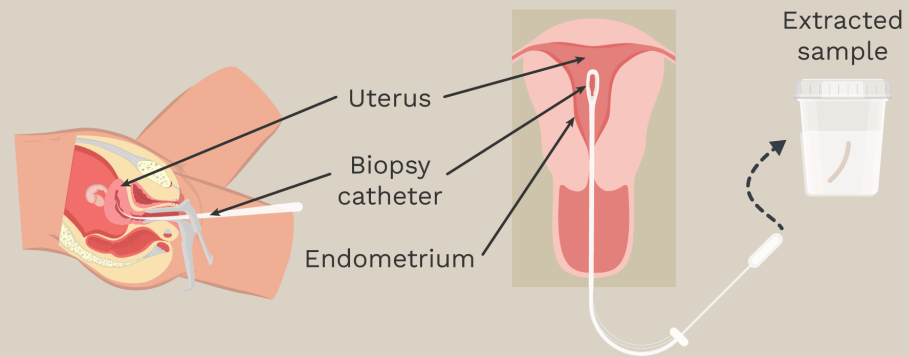
This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.

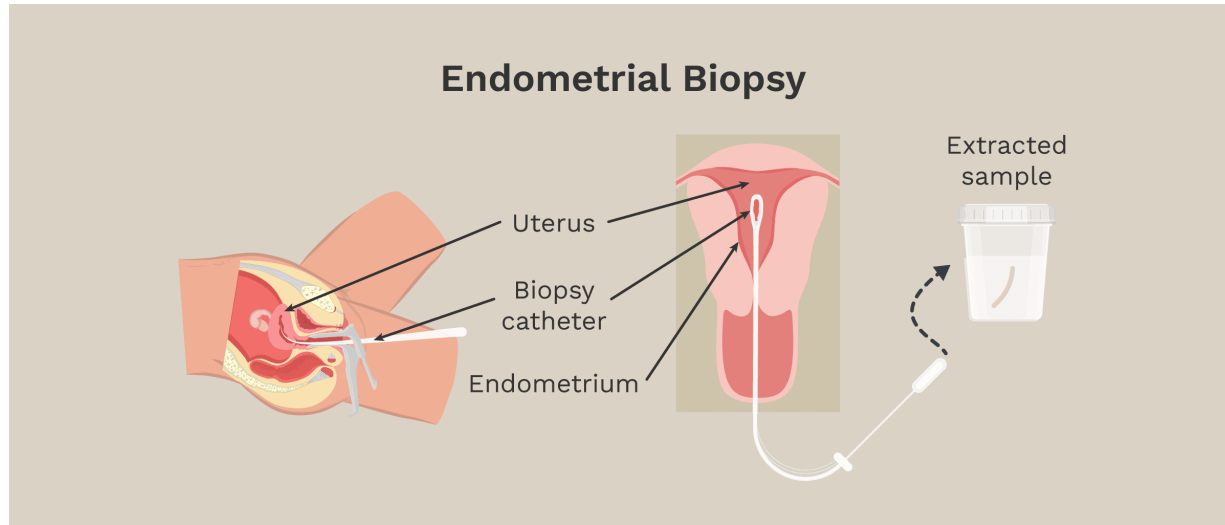
Management of Acute Abnormal Uterine Bleeding in Nonpregnant Reproductive-Aged Women

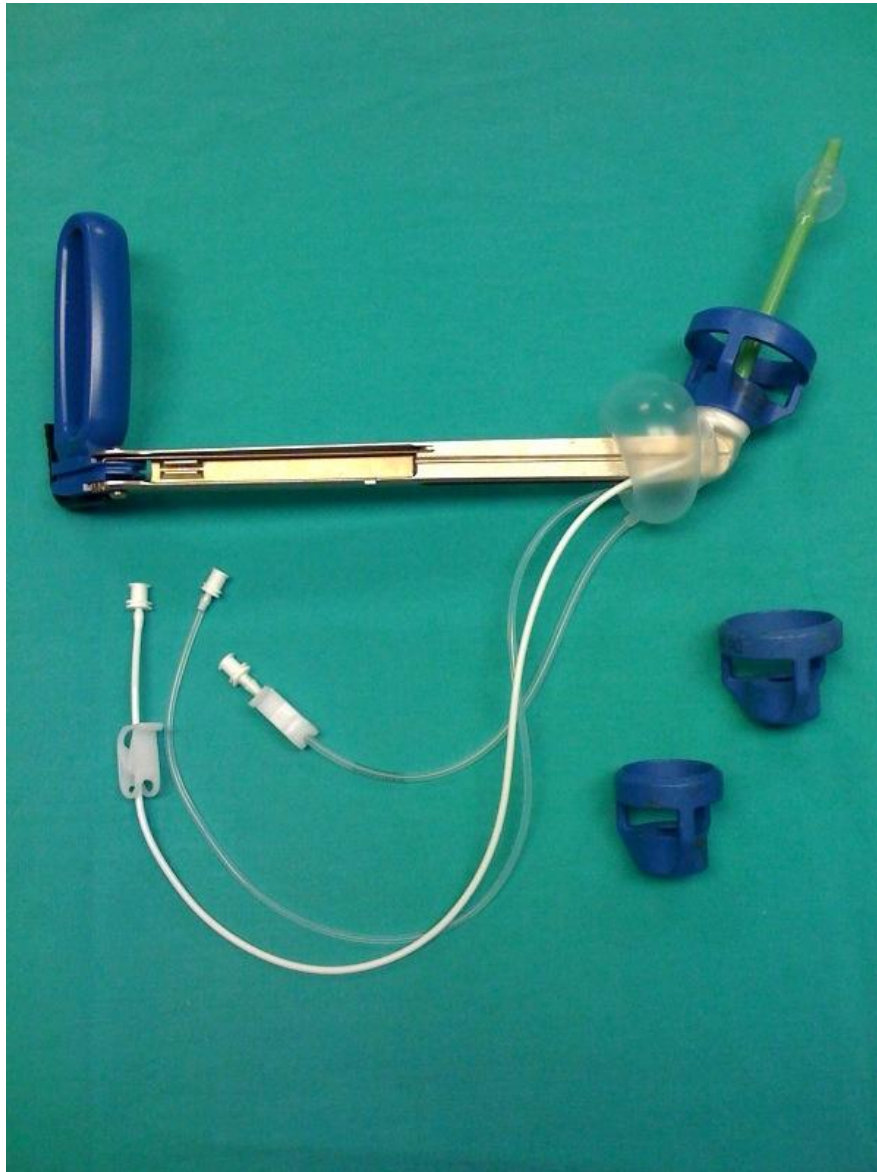
ABSTRACT: Initial evaluation of the patient with acute abnormal uterine bleeding should include a prompt assessment for signs of hypovolemia and potential hemodynamic instability. After initial assessment and stabilization, the etiologies of acute abnormal uterine bleeding should be classified using the PALM-COEIN system. Medical management should be the initial treatment for most patients, if clinically appropriate. Options include intravenous conjugated equine estrogen, multi-dose regimens of combined oral contraceptives or oral progestins, and tranexamic acid. Decisions should be based on the patient's medical history and contraindications to therapies. Surgical management should be considered for patients who are not clinically stable, are not suitable for medical management, or have failed to respond appropriately to medical management. The choice of surgical management should be based on the patient's underlying medical conditions, underlying pathology, and desire for future fertility. Once the acute bleeding episode has been controlled, transitioning the patient to long-term maintenance therapy is recommended.

EMBx should be performed in patients with AUB who are older than 45 years as a first-line test - also in 35+ years with a history of unopposed estrogen exposure (obesity or PMOS)

Endometrial Biopsy







- RUMI
- Speculum limits
- Ditch the chair
- Blind is better

Minimally Invasive Surgery in Morbidly Obese Women

John O. Schorge, MD

Minimally invasive gynecologic surgery provides a number of clinical advantages compared with open laparotomy. Over the past 25 years, important modifications and innovations have further expanded the utility of these techniques. Complications such as surgical site infection, venous thromboembolism, and wound cellulitis or dehiscence rise in concert with escalating obesity, so it stands to reason that these patients would derive the most benefit from minimally invasive surgery. Yet, surgical complexity also rises proportionally, requiring fastidious technique and allowing little margin for error. As nonsurgical interventions become more commonplace and the rate of morbid obesity continues to increase, those women actually requiring a gynecologic operation through an abdominal approach will be ever more likely to present a number of challenges to safe completion of minimally invasive surgery. This article frames the topic and offers some tips across the range of care to enhance the likelihood of achieving success in this patient population most in need of surgical expertise.

(Obstet Gynecol 2020;135:199–210)

DOI: 10.1097/AOG.0000000000003588

"There's a weight above me

And the pressure is all too strong

To breathe deep

Breathe long and hard"

—*"Marian"—The Sisters of Mercy*¹

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of the robotic platform. Both are superior, in capable hands, to open laparotomy, providing an immensity of clinical benefits in addition to reduced length of hospitalization, faster return to normal activities, and decreased costs, despite longer reported operative times.^{2–4} Vaginal surgery, widely acknowledged as the least invasive option, offers additional advantages but also a much narrower portfolio of possible procedures.^{2,5} Consequently, the focus of this piece will assume some level of abdominal access and intraperitoneal visualization.

Gynecologic surgery has been revolutionized by

Jan 2020
Obstet Gynecol



Fig. 3. Steep Trendelenburg repositioning with bariatric Allen stirrups and the upper torso strapped to operating table with adherent tape owing to earlier attempts that resulted in slippage.

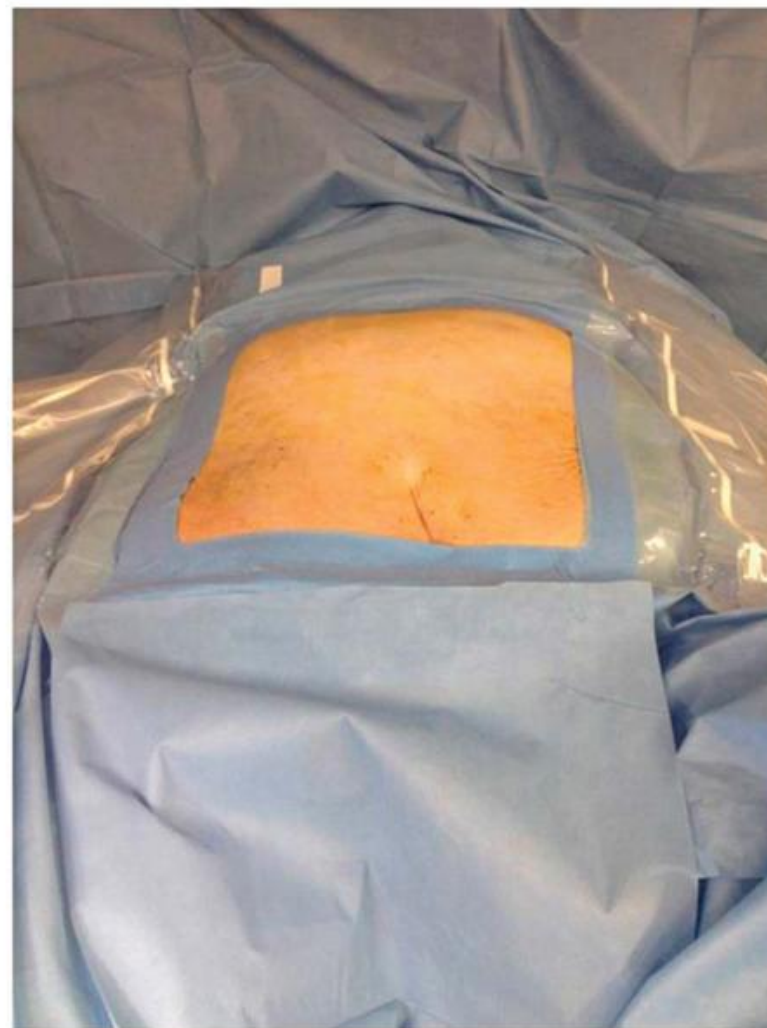
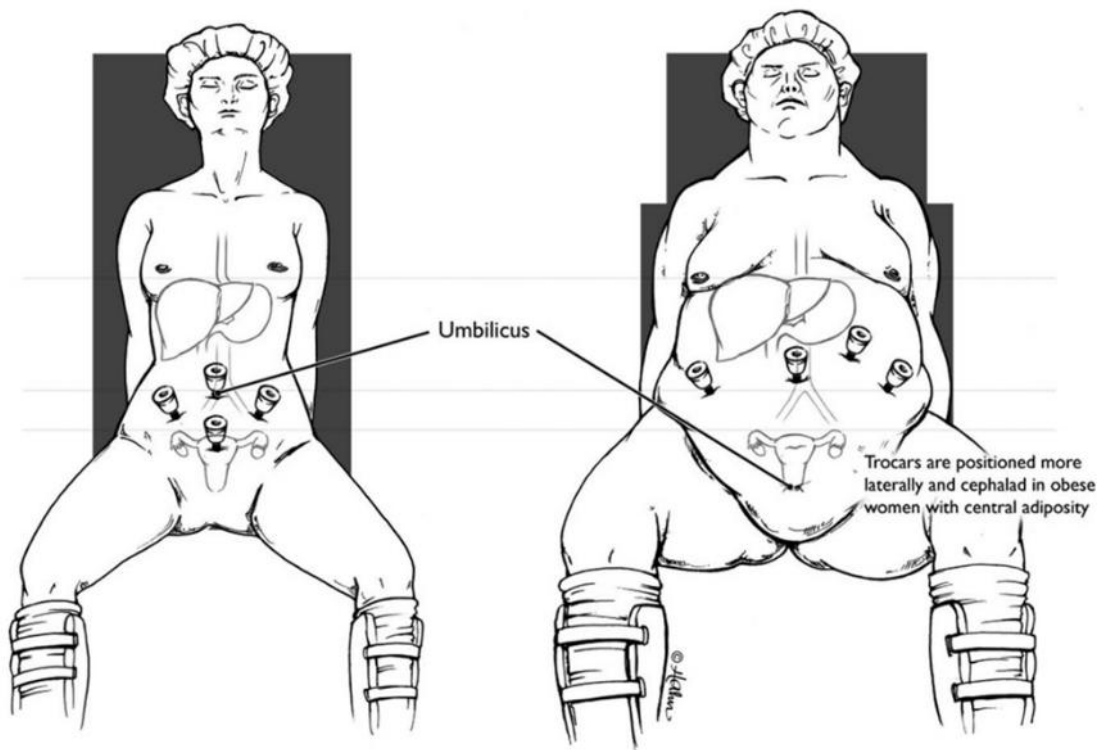


Fig. 4. Standard laparoscopy drape proving inadequate in the morbidly obese patient by covering up abdominal wall anatomy.



CONCLUSIONS

“The most fulfilling part of successfully performing minimally invasive surgery in morbidly obese patients is that, even though the level of technical difficulty escalates proportionally with BMI without cresting, the clinical benefit to this challenging patient population is realized in parallel.

Rates of intraoperative and postoperative complications are decreased, and risk of blood transfusion is less, with much shorter length of hospitalization.

On the other hand, what ordinarily would constitute a relatively minor intraoperative set-back or trivial event can more readily cascade into catastrophe, and poor techniques are eventually going to be exposed.

To consistently achieve good, even excellent, outcomes will test even the most astute clinician, requiring complete attention to detail during all facets of care.”

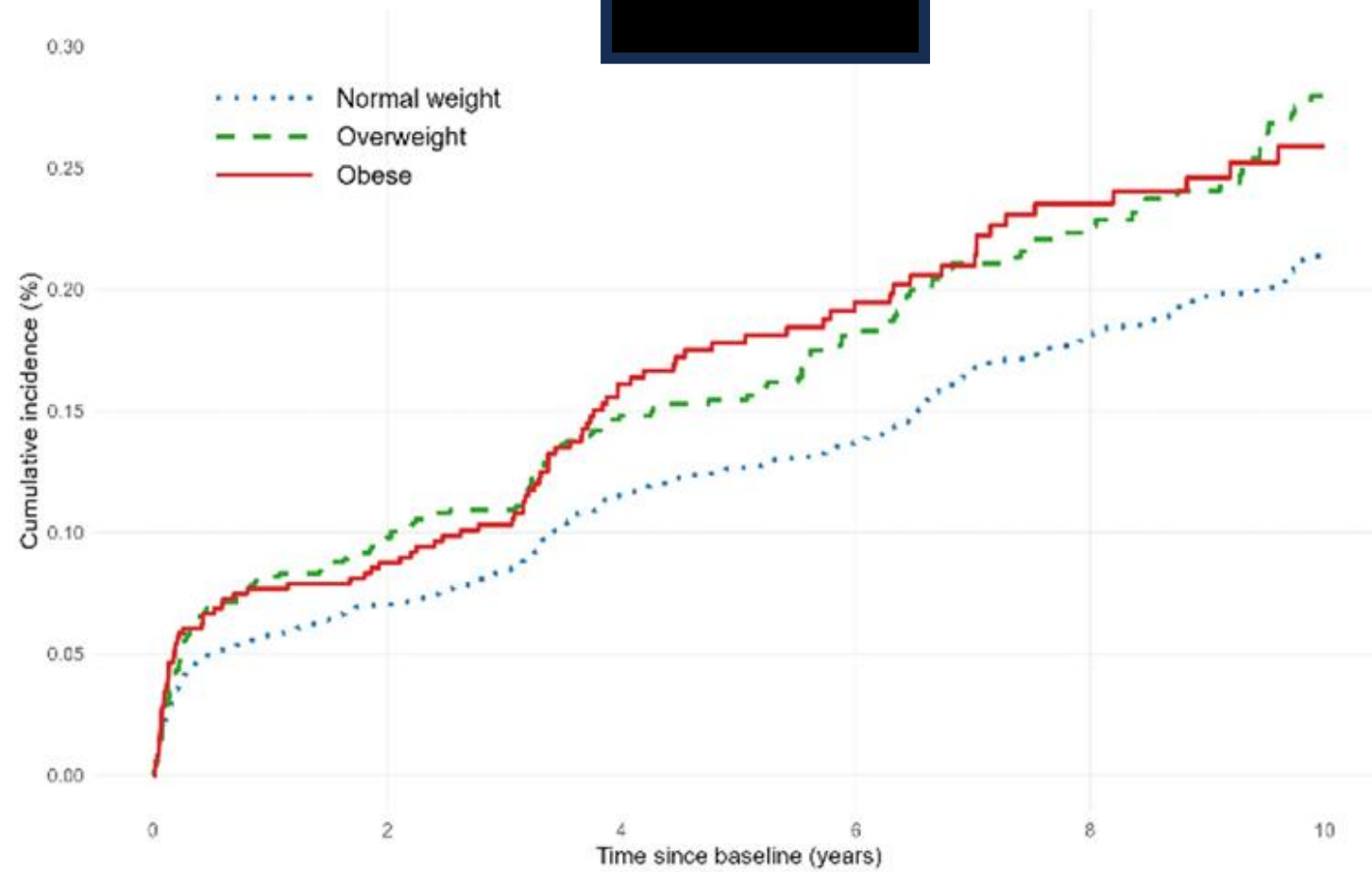
TO SHIFT (SWITCH) GEARS



definition

to suddenly change
what you're doing; to
move from one
activity to another

Cervix cancer



Cervical cancer risk factors^[17-19]

Genital Infection with high risk human papillomavirus

HIV infection

Smoking

Younger age at first sexual intercourse

Greater number of sexual partners

Oral contraceptives use greater than 5 yr

Having 4 or greater full-term pregnancies

History of sexual transmitted diseases

HIV: Human immunodeficiency virus.



- Other higher priority parts to the visit
- Positioning challenges
- Can you even see the cervix?



Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed



Review Article

The influence of overweight and obesity on participation in cervical cancer screening: A systematic review and meta-analysis

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ARTICLE INFO

Keywords:

BMI
Obesity
Overweight
Cervical cancer
Cervical cytology
Screening adherence

ABSTRACT

The prevalence of obesity is increasing worldwide. The incidence of cervical cancer has decreased after implementation of cervical cancer screening, however, obese women have higher risk of cervical cancer than women of normal weight. This might be caused by a lower participation rate in cervical cancer screening. The aim of this systematic review and meta-analysis was to examine the influence of overweight and obesity on adherence to cervical cancer screening recommendations. We conducted a thorough systematic literature search of electronic databases to identify studies examining screening participation among overweight and obese women compared to women of normal weight. Based on a random effect model, we calculated pooled odds ratios (OR) of screening participation with corresponding 95% confidence intervals (CI). I^2 statistic was used to describe heterogeneity. A total of 32 papers were included. The pooled OR of screening participation was 0.94 (95%CI: 0.89–0.99) for overweight women and 0.79 (95%CI: 0.68–0.92) for obese women compared to women of normal weight. The heterogeneity was substantial (overweight: $I^2 = 80\%$; obese: $I^2 = 82\%$). The OR for screening adherence was 0.91

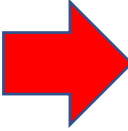
CONCLUSION:

Obese women are less likely to participate in cervical cancers screening compared to women of normal weight.

In addition, the likelihood of adherence to screening recommendations decreases with increasing obesity class.

This stresses the need for targeted intervention to increase screening adherence for overweight and obese women

Educational objectives

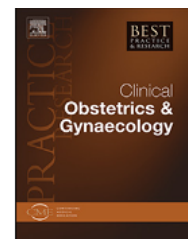
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7

Challenges of morbid obesity in gynecological practice



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Gynecology ^{a, b}, Richard Adedamola Onifade, FRCOG,
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A B S T R A C T

Keywords:

Morbid obesity
Super obesity

Obesity is currently a global pandemic, with increasing trends worldwide. Data from the WHO, IIS, CDC, and the IJK show an

Morbid obesity significantly impacts several aspects of female life and health, from adolescence, through the reproductive years, to the postmenopausal age group.

There is a higher prevalence of menstrual disorders and infertility and reduced success rates of assisted reproduction; increased risk of miscarriage; pelvic organ prolapse

Proposed mechanisms for menstrual irregularity in the morbidly obese include:

- a. Polycystic ovarian syndrome.
- b. Increased production of sex hormone binding globulin, which increases bioavailable testosterone.
- c. Increased ovarian androgens and their conversion to estrogens in adipose tissue, thus exerting negative feedback on the hypothalamic-pituitary-ovarian (HPO) axis.
- d. Hyperinsulinemia, which has a negative effect on the HPO axis.
- e. Relatively increased production of adipokines such as adiponectin, compared with leptin, with negative effects on the HPO axis and folliculogenesis.

Miscarriage



1 in 4 pregnancies end in miscarriage



The reasons behind the association between high BMI and ***miscarriage*** are open to debate.

It has been suggested that obesity impacts on the ovarian environment, resulting in impaired folliculogenesis and oogenesis. This hypothesis is supported by studies demonstrating comparable miscarriage rates in obese and nonobese women after adjusting for embryo and oocyte quality.

An alternative view is that obesity has a detrimental impact on the uterine environment. Some studies have reported lower pregnancy rates in obese women, even in cases where donated oocytes have been used or where adjustments have been made for embryo quality, suggesting a problem with the uterine environment

Regarding contraception in the morbidly obese:

- a. Morbid obesity can affect the pharmacokinetics of oral hormonal contraceptives, which can affect the effectiveness and side effect profile.
- b. Estrogen-containing contraceptives are associated with a higher risk of deep vein thrombosis than pregnancy and the puerperium.
- c. The recommended effective contraceptives include intrauterine devices, progesterone implants, and injectables.
- d. Women should be advised to use effective contraception after bariatric surgery and avoid pregnancy for at least 1 year.
- e. Laparoscopic sterilization is not associated with any excess risk in the morbidly obese.

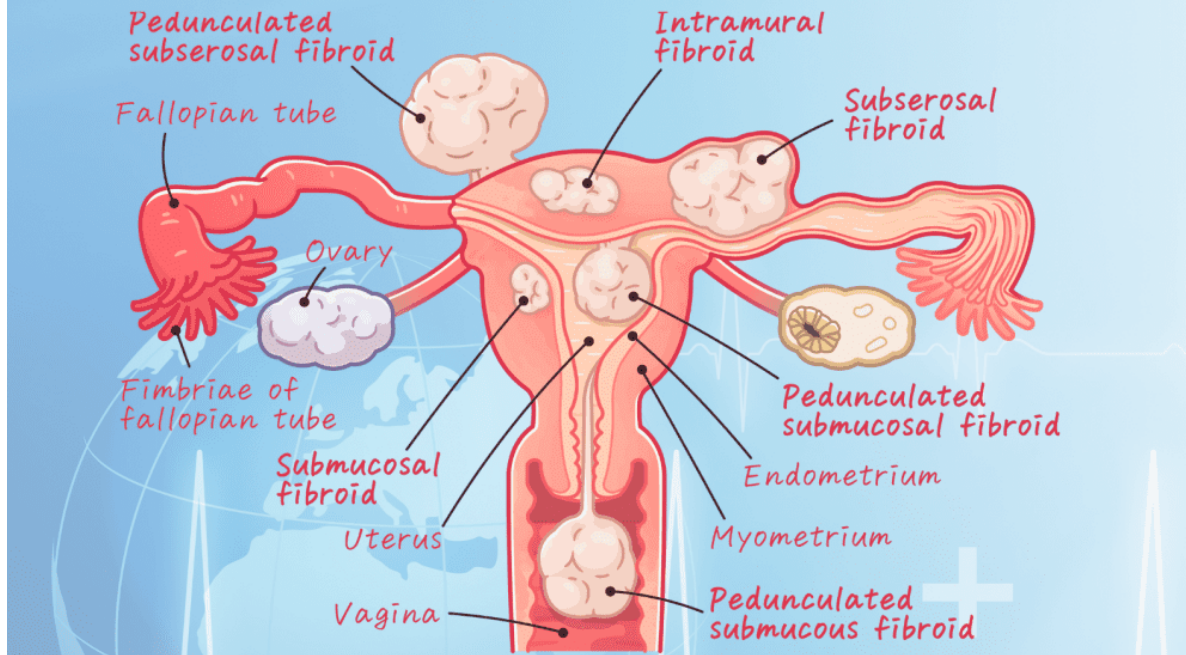
Reduced efficacy of hormonal contraception in obese women could be due to lower plasma concentrations of the active agent.

There are differences in levonorgestrel half-life, clearance and time to reach a steady state between obese and normal-BMI women. Doubling of the time taken by levonorgestrel to reach a steady state in obese women created a '**window of opportunity**' for follicular recruitment, development and ovulation.

In addition, the use of combined OCs by obese women is not without its hazards. Both the combined pill and obesity *per se* are associated with the risk of DVT. That risk is increased **tenfold** in overweight women (BMI >25) who are taking oral contraceptives.



TYPES OF FIBROIDS



Obesity has been linked with uterine fibroids with patients at double the risk when obese than the general population

Obesity causes a relative **hyperestrogenic** state, which encourages fibroid growth.

Types of Pelvic Organ Prolapse



Normal Anatomy



Rectocele



Cystocele



Uterine prolapse

The prevalence of pelvic floor dysfunction is **highest** in morbidly obese women (BMI >40).

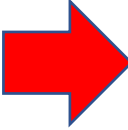
Multifactorial: sedentary lifestyle, chronic constipation, increased abdominal pressure

Furthermore, a small degree of weight loss (10%) is associated with borderline worsening of uterine prolapse, suggesting that the damage to the pelvic floor caused by obesity is probably irreversible.

Table 1. Impact of obesity on gynecology.

Condition/treatment modality	Impact on obese women
Puberty	Earlier onset
Polycystic ovary syndrome	Phenotypic expression: increased
Anovulatory infertility	Increased [122]
Fertility treatment Ovulation induction	Gonadotropin requirement: increased [122]
Assisted conception	Gonadotropin requirement: increased [122] Oocyte number: decreased Cycle cancellation: increased Pregnancy rate: decreased Effect on live birth: uncertain
Early pregnancy loss	Increased
Contraceptive safety	Decreased
Contraceptive efficacy	Decreased
Endometrial polyps	Increased
Menstrual irregularities	Increased
Fibroids	Uncertain
Urinary incontinence	Increased
Pelvic organ prolapse	Increased

Educational objectives

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Gynecologic surgery has been revolutionized by

Preoperative Considerations

“It is imperative to have an iron-clad indication for surgery and to establish a trusting rapport in the office.

Often, the patient has been bounced around, made to feel shamed, told she must lose weight, or just been the recipient of off-putting body language, real or perceived, by the antecedent provider with whom she sought care.

She may be apologetic about or oblivious to the surgical challenges, and I have seen both in equal measure.

What matters is agreeing on the necessity and scope of the operation and being realistic yet not disparaging about the risks involved.

So-called “medical clearance” is ideal to optimize concurrent medical conditions and to temporize any cardiovascular or pulmonary disease.”



1344749728

Type II DM

What we know

- DM affects in 1 in 11
- Preop testing:
 - Serum electrolytes
 - Urinalysis
 - EKG
- Looking for undiagnosed metabolic abnormalities, nephropathy, cardiac ischemia



1344749728

Type II DM

What we know

- HgA1C should be checked within 3 months and less than 8
- Levels of 8+ a/w poor surgical outcomes and consideration should be given to postpone elective surgery



1344749728

Type II DM

What we know

- Surgical stress leads to...
 - Worsening insulin resist
 - Decreased peripheral glucose utilization
 - Impaired insulin secretion
- GETA a/w larger stress response vs regional



Surgery in morbidly obese pts: preop

- Pre- and postop glycemic control
- EKG if risk factors for CAD (smoking, HTN, DM, fam hx CAD)
- OSA has increased risk for periop complications such as O₂ desat, acute respiratory failure, post-op cardiac events and ICU admission

STOP

Do you often SNORE loudly (louder than talking)	Yes	No
Do you often feel TIRED, fatigued or sleepy during day	Yes	No
Has anyone OBSERVED you stop breathing during sleep	Yes	No
Do you have high blood PRESSURE	Yes	No

BANG

BMI more than 35Kg/m²	Yes	No
AGE over 50 years	Yes	No
NECK circumference > 40cm	Yes	No
GENDER Male	Yes	No

Score 1 point for each positive response

Scoring Interpretation: 0-2 Low Risk; 3-4 Intermediate Risk; 5 or more High Risk



Preop mgmt

- Diabetic gastroparesis should be tx with a prokinetic agent (ie metoclopramide) to decrease aspiration risk
- Minimize opioid use to prevent additional decreased motility



Intraop mgmt

- Anes: avoid hypotension especially if diabetic kidney disease - NSAIDs also used cautiously
- Optimize positioning as pts with diabetic autonomic neuropathy are at increased risk for peripheral neuropathy
- Aseptic technique and proper abx prophylaxis as increased risk infxn



Intraop mgmt

- Optimize temp control with Bair-Hugger or blankets due to risk of poor wound healing
- Hypothermia can lead to...
 - Peripheral insulin resistance
 - Hyperglycemia
 - Decreased wound healing
 - Infection



Intraop mgmt.: morbidly obese

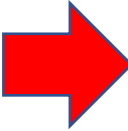
- Increased risk for soft-tissue pressure injuries and nerve injuries
- Steep T-berg with caution due to potential compromise ventilation
- Bariatric trocars to navigate the increased abd wall depth
- Distorted anatomy of abdominal wall with pannus



Surgery in morbidly obese pts: postop

- Risk-reducing strategies include...
 - Early ambulation
 - Incentive spirometry
 - (?) Extended VTE prophylaxis
- Tx with LMWH x 2-4 weeks for...
 - Cancer patients
 - Immobility
 - Hx of VTE
 - Inherited/acquired thrombophilia
 - Age > 60

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Contents lists available at ScienceDirect

Gynecologic Oncology Reports

journal homepage: www.elsevier.com/locate/gynor

Review article

Prevention of endometrial cancer through lifestyle Interventions: A systematic review and synthesis

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ARTICLE INFO

Keywords:

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Lifestyle

Lifestyle intervention

Prevention

ABSTRACT

Endometrial cancer is the most common gynaecological malignancy in Australia. Epidemiological studies have widely documented the association of endometrial cancer with modifiable lifestyle risk factors, most notably obesity. However, preventative strategies for endometrial cancer have not been well reported. The objective of this systematic review was to identify interventions targeted towards modifiable lifestyle risk factors that may reduce the risk of endometrial cancer. Literature published in the past ten years (January 2010 – January 2021) was retrieved from PubMed, Embase and Web of Science literature databases. Of 593 studies potentially eligible, 41 were assessed in full-text, and nine studies were included in the systematic review and synthesis without meta-analysis following the SWiM guidelines. The included studies were highly heterogenous with respect to the type of interventions implemented and the outcomes measured. We identified that diet and physical activity interventions, surgical weight loss interventions, and hormonal interventions were associated with changes in endometrial cancer biomarkers including circulating hormones and tissue markers. We identified a reduction in endometrial proliferation following lifestyle intervention as measured by the ki-67 proliferation index. Furthermore we identified an increase in adiponectin (a circulating biomarker of adiposity) following lifestyle intervention and a reduction in circulating insulin levels following lifestyle intervention. This review highlighted

Preventative Counseling: 99401-99412

The standard obesity medicine behavioral counseling codes are 99401-99412. These codes are used to report services for the purpose of promoting health and preventing illness. Typically, the 5-A's approach—ask, advise, assess, assist, and arrange—is used. More specific counseling techniques such as motivational interviewing and cognitive behavior therapy may also be employed. These codes are time-based with increments of 15 minutes and cover both individual and group counseling. The wording pertaining to the time requirement states they require *approximately* 15 minutes. In time-based codes that do not specify “at least” a specific time, the 50 percent rule applies. So, counseling for at least 7.5 minutes codes to a 99401 (approximately 15 minutes), and 22.5 minutes codes to a 99402 (approximately 30 minutes).

Reimbursement for 99401 is typically on the order of \$30-40. While not a princely sum, this is typically a service done in addition to pharmacotherapy management. Apply a 25 modifier, denoting a separate service on the same visit, and this will earn an extra \$35 on your standard 99214 reimbursement. Better yet, this coding subset is covered as a preventative service, so insurance pays the entire amount—no patient cost sharing is allowed. Medicare has its own separate code, G0447, which pays about 25 percent less and comes with more specific coding rules.

Read More: [Myths of patient experience platforms](#)

Health Behavior Assessment and Intervention Codes: 96156, 96158

These codes are similar to preventative service counseling, but they deal more with specific behavioral problems often encountered in an obesity medicine practice. These services “...are used to identify and address the psychological, behavioral, emotional, cognitive, and interpersonal factors important to the assessment, treatment, or management of physical health problems,” [according to the American Psychological Association](#). Consider these codes for specific behavioral problems, such as addiction, eating disorders, and environmental conditions that cause eating problems. 96156 is an untimed code used for an assessment or reassessment of a behavioral condition, and it reimburses about three times more than a 99401 code.

CPT code 96158 is for behavioral intervention. While the code is for the initial 30 minutes of counseling, the 50 percent rule also applies. Be sure to document at least 16 minutes of therapeutic counseling. The code reimburses about twice as much



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The role of bariatric and metabolic surgery in the development, diagnosis, and treatment of endometrial cancer

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The obesity pandemic continues to contribute to a worsening burden of disease worldwide. The link between obesity and diseases such as diabetes, cardiovascular disease, and cancer has been well established, yet most patients living with obesity remain untreated or undertreated. Metabolic and bariatric

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PROgesterone Therapy for Endometrial Cancer Prevention in Obese Women (PROTEC) Trial: A Feasibility Study

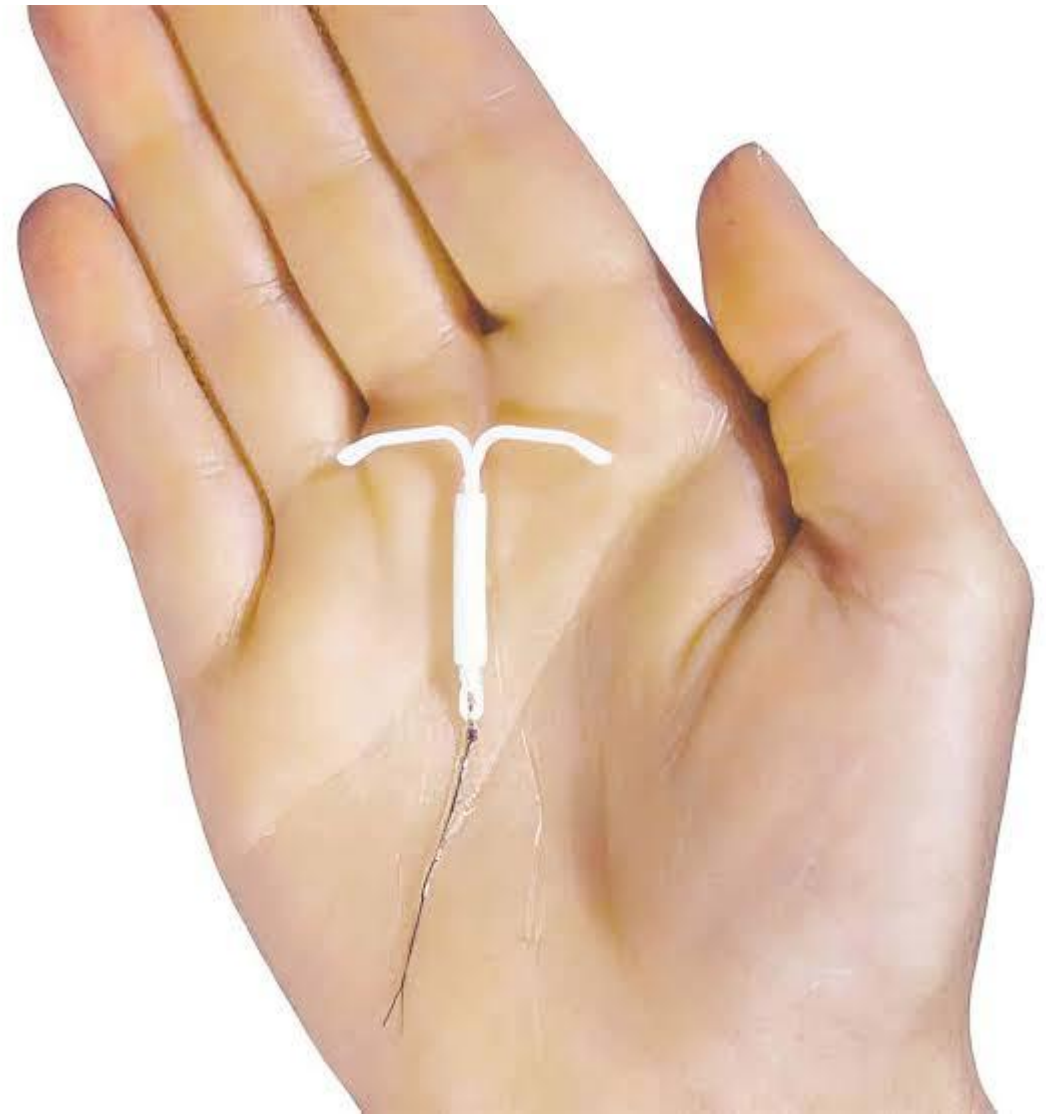
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Abstract

Obesity is the major etiologic driver for endometrial cancer. The levonorgestrel intrauterine system (LNG-IUS) reduces the risk of endometrial cancer and its precursor, atypical hyperplasia. We assessed feasibility and uptake of the LNG-IUS for primary prevention of endometrial cancer in high-risk women and its impact on endometrial tissue biomarkers. Women with class-III obesity [body mass index (BMI) > 40 kg/m²] and histologically normal endometrium were invited to participate in a clinical trial of the LNG-IUS for endometrial protection. Recruitment, successful LNG-IUS insertion, and adherence to trial procedures were recorded. We measured impact of the LNG-IUS on circulating biomarkers of endometrial cancer risk, endometrial proliferation (Ki-67, pAKT, PTEN), endometrial hormone receptor status [estrogen receptor and progesterone receptor (PR)], mental wellbeing, and menstrual function. At 6 months, women chose to keep their LNG-IUS or have it removed. In total, 103 women were approached, 54 were offered a participant information sheet, 35 agreed to participate, and 25 received a LNG-IUS. Their median age and BMI were 54 years [interquartile range (IQR) 52-57] and 47 kg/m² (IQR 44-51), respectively. Three women (3/35, 9%) were ineligible due to atypical hyperplasia/endometrial cancer on their baseline biopsy. The LNG-IUS was well tolerated and had a positive overall effect on bleeding patterns and mental wellbeing. The LNG-IUS was associated



THE FINAL POINTS

- BMI 40+ women have 10-15% risk EC
- Don't neglect cervix cancer screening!
- Stay adherent to ACOG guidelines
- Patients needing surgery present many challenges and refer if necessary
- Maximize your non-surgical interventions

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