

# Obesity in Gynaecology

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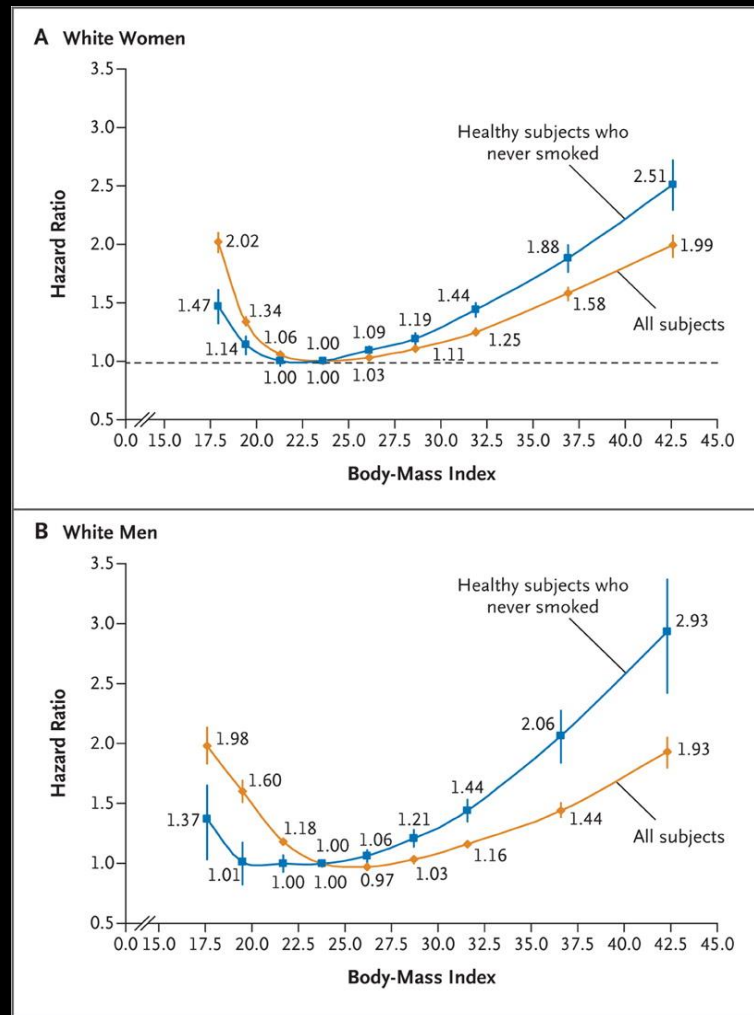
# WHY?



- *To travel is to live*
- To live is to become obese
- What has that to do with Obstet and Gyn???
- No other specialty with so many consultations
- Opportunities to interfere
- Obligation

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# Death from Any Cause According to Body-Mass Index



Berrington de Gonzalez A et al. *N Engl J Med* 2010;363:2211-2219.



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# Estimated Hazard Ratios for Death from Specific Causes among Healthy Subjects Who Never Smoked, According to Body-Mass Index.

**Table 3.** Estimated Hazard Ratios for Death from Specific Causes among Healthy Subjects Who Never Smoked, According to Body-Mass Index.\*

Cause of Death	Body Mass Index								
	15.0–18.4	18.5–19.9	20.0–22.4	22.5–24.9	25.0–27.4	27.5–29.9	30.0–34.9	35.0–39.9	40–49.9
<b>Cancer</b>									
No. of deaths	140	400	1933	3099	2948	1755	1851	520	207
Hazard ratio (95% CI)	1.09 (0.92–1.29)	0.96 (0.87–1.07)	0.95 (0.90–1.01)	1.00	1.05 (1.00–1.10)	1.12 (1.06–1.19)	1.34 (1.27–1.42)	1.47 (1.34–1.61)	1.70 (1.48–1.96)
<b>Cardiovascular disease</b>									
No. of deaths	151	301	1222	2075	2334	1557	1697	604	267
Hazard ratio (95% CI)	1.50 (1.27–1.77)	1.15 (1.02–1.30)	0.96 (0.90–1.03)	1.00	1.19 (1.12–1.26)	1.43 (1.34–1.53)	1.80 (1.69–1.93)	2.63 (2.40–2.88)	3.56 (3.12–4.04)
<b>Other causes</b>									
No. of deaths	182	372	1570	2241	2093	1255	1288	503	261
Hazard ratio (95% CI)	1.88 (1.61–2.19)	1.30 (1.17–1.45)	1.12 (1.05–1.19)	1.00	1.00 (0.94–1.06)	1.07 (1.01–1.15)	1.24 (1.16–1.33)	1.91 (1.73–2.11)	2.96 (2.60–3.38)

\* Participants were considered healthy if they had no cancer or heart disease at baseline. Hazard ratios were calculated with age as the underlying time scale, stratified by study, and adjusted for sex, alcohol consumption (grams per day), educational level, marital status, and overall physical activity.

# Obesity Agenda



- Endometrial cancer
- Surgery





Welcome to

# Middelfart in Denmark

The 27th-29th of August 2015



## Topics on NOCOGO 2015

First announcement

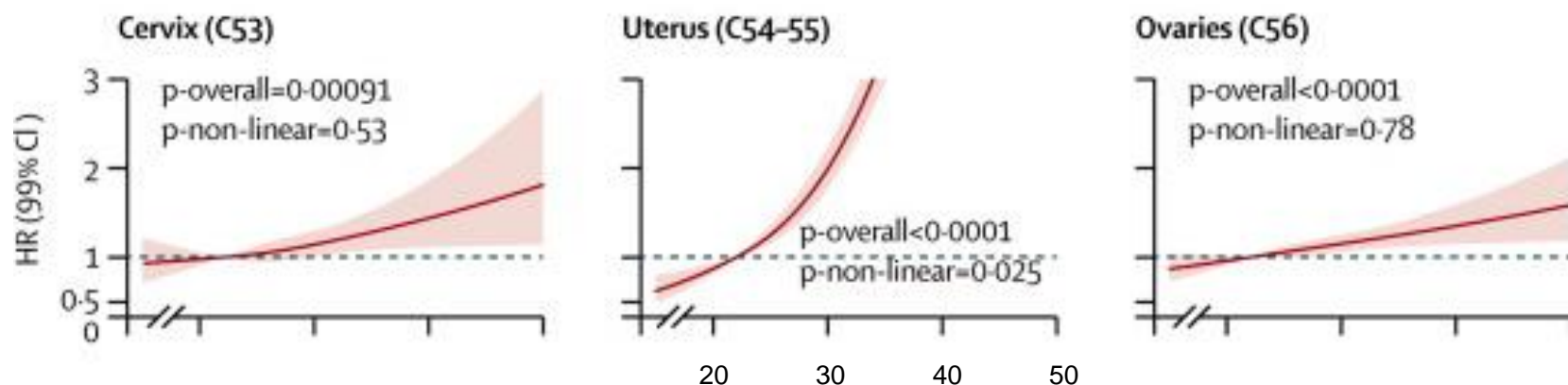
- Epidemiology
- Fertility
- Medical obstetrics
- Surgical Obstetrics & gynaecology
- Neonatology
- Basic research

## 2nd NOCOGO

NOrdic Congress on Obesity in Gynaecology and Obstetrics



# BMI and Gynaecological Cancers

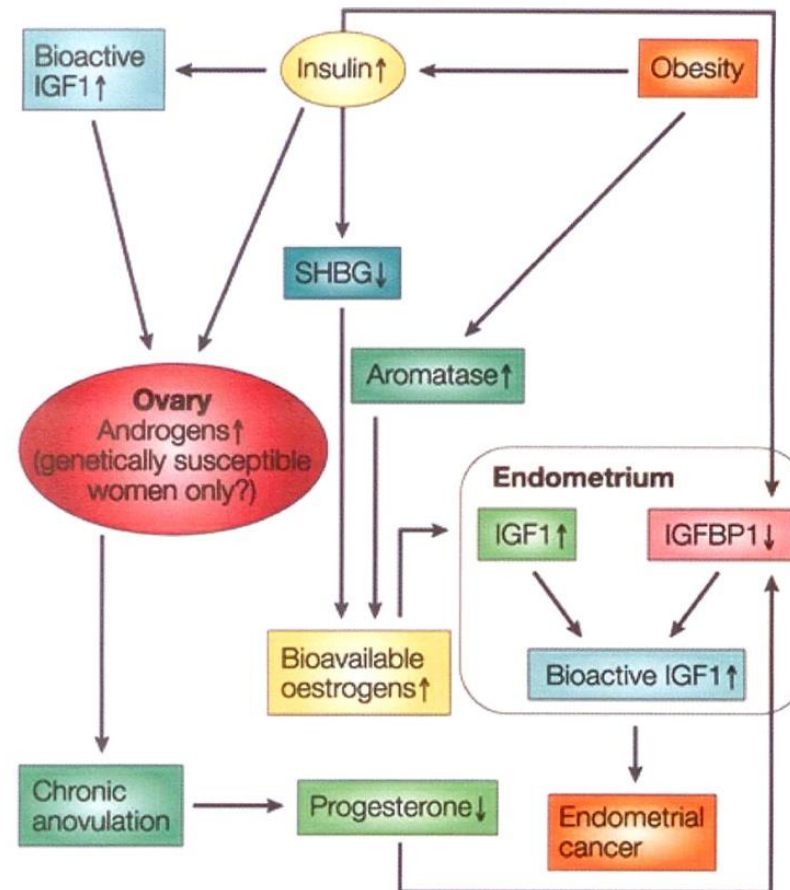


- 41% of the uterine cancers attributable to excess weight

Krishnan Bhaskaran K et al.

Body-mass index and risk of 22 specific cancers: a population-based cohort study of 5.24 million UK adults. The Lancet, 2014

# Endometrial Cancer, Obesity and Hormones



Calle EE and Kaaks R. Nature Reviews Cancer 4, 2004



# Endometrial Cancer and BMI

- High BMI is associated with
  - Increased all cause mortality (HR 1.9-2.8)
  - Well differentiated and endometrioid tumours
  - Low risk of metastatic disease (low FIGO-stage)
  - Low number of lymph node mets
- BMI not related to
  - Progression-free survival
  - Disease specific mortality

Gunderson C et al. Gynecol Oncol 133 (2014) 23-27

Arem and Irwin. Int J Obes (Lond) 37(5) 2013

# Endometrial Cancer

## QoL, BMI, and Physical Activity

Quality of Life Outcome	Overall Effect of BMI, kg/m <sup>2</sup>		Overall Effect of PA, min·wk <sup>-1</sup>		Effect of BMI Stratified by Level of PA			
					<150 min·wk <sup>-1</sup> (n = 111)		≥150 min·wk <sup>-1</sup> (n = 102)	
	β	P	β	P	β	P	β	P
Composite outcome								
FACT-G	<b>-7.14</b>	<b>0.050</b>	-0.68	0.364	<b>-8.75</b>	<b>0.025</b>	<b>-4.89</b>	0.558
Subscale outcomes								
PWB	<b>-2.32</b>	<b>0.002</b>	-0.23	0.112	<b>-3.07</b>	<b>&lt;0.001</b>	-0.94	0.765
SFWB	-1.06	0.603	-0.21	0.299	0.90	0.777	-1.82	0.331
EWB	0.44	0.899	-0.19	0.244	-0.28	0.973	-0.68	0.845
FWB	<b>-2.44</b>	<b>0.008</b>	-0.05	0.950	<b>-2.80</b>	<b>0.010</b>	-1.94	0.284

\*Because of nonnormality of variables, QoL outcomes were squared (ie, QoL<sup>2</sup>) to reduce skew in regression models, then back transformed for data presentation.

†Variables in the regression models included age, race, pathology, stage, treatment type, number of lymph nodes removed, years since diagnosis, and Charlson Comorbidity Index score. Values in bold are significant.

Lin, Lilie; Brown, Justin; Segal, Saya; Schmitz, Kathryn. Int J of Gyn Cancer. 24(6):1027-1032, 2014

# Gynaecological Surgery and Obesity



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# Gynaecological Surgery and Obesity

- TAH, VH, LAVH, TLH, robotic assisted LH, laparoscopic assisted mini-laparotomy
- +/- removal of the cervix
- Obesity is not included as a cofactor
- Retrospective cohort studies
- Small numbers
- Surgeons experience vary
- Type of obesity (amount of intra-abdominally fatty tissue)

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# Laparoscopy versus Laparotomy

- Complications
  - Intraoperative
    - Ying et al: OR 1.35 (1.05-1.74)
    - Galaal k et al: No difference in intra-operative complications (bowel, vascular, urologic)
  - Postoperative: OR 0.62 (0.52-0.73)
- No difference in
  - Peri-operative mortality
  - Disease-free and overall survival

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Ying, H et al. JMIG 2013. Laparoscopic treatment of endometrial cancer: Systematic Review (9 RCTs, n=3615)  
Galaal k et al Cochrane Review 2012 (8 RCTs, n=3644)

# Laparoscopy versus Laparotomy

- Duration of surgical procedure
  - Mean difference: 33 mins (16-49 mins)
- Shorter hospital stay
  - -3.4 (-3.8 to -3.0)
- Laparoscopy
  - Significantly improves QoL up to 4 years postoperatively
  - Decreases blood loss (-107 mL)

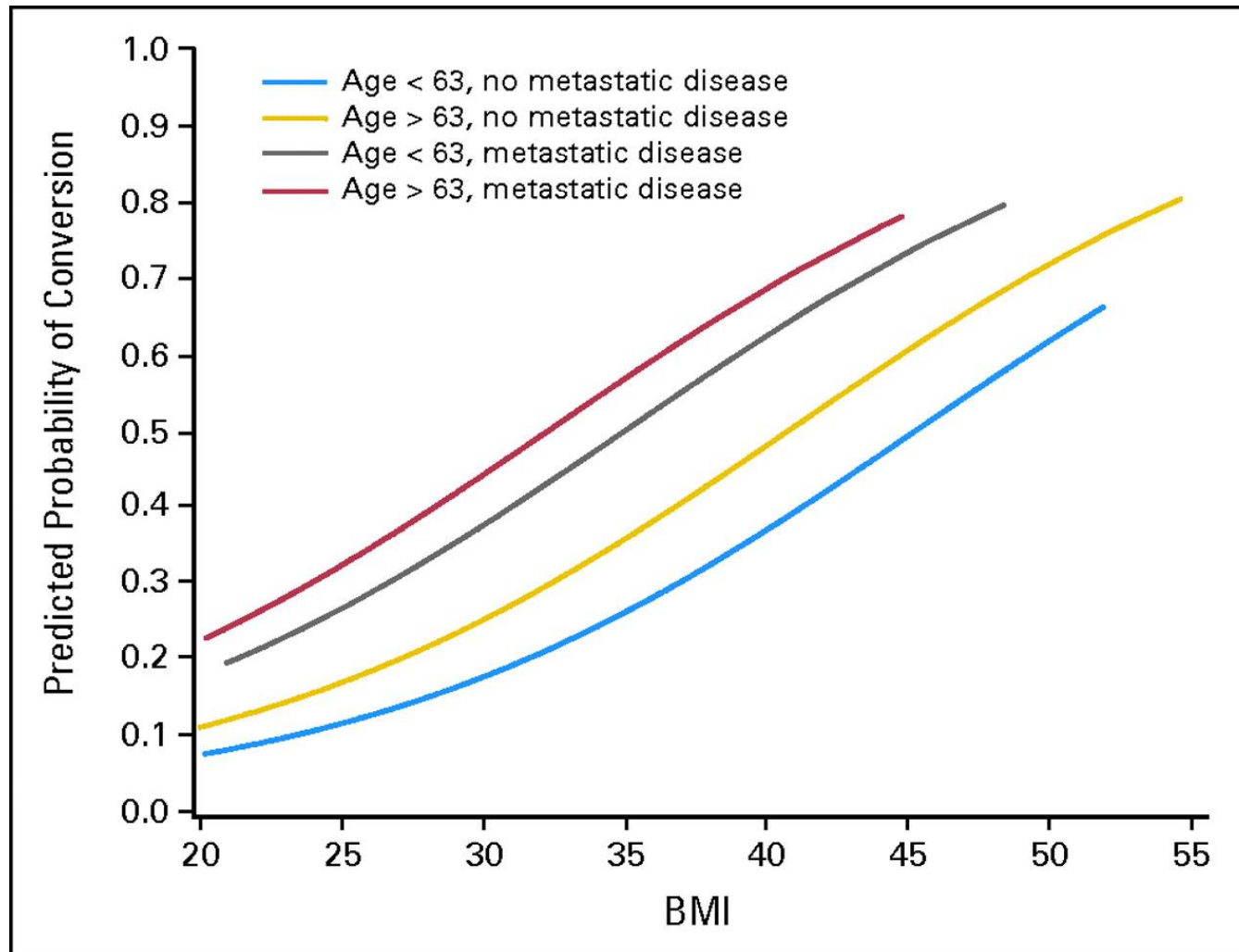
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# Surgery and Obesity

## GOG LAP2 trial (n=2616)

- Postoperative events
  - BMI<30            14-15%
  - BMI $\geq$ 30            19-24%
  - DVT, wound infection
- Antibiotics
  - BMI<30            16%
  - BMI $\geq$ 30            20-30%
- Increased hospital stay

# Risk of Conversion by BMI, Age, and Metastatic Disease



Walker J L et al. JCO 2009;27:5331-5336



# Bottom Line

- Laparoscopy is to be preferred
  - Post-op complications
  - Shorter hospital stay
  - QoL?
- Surgery of the obese
  - Difficult (increased conversion rate)
  - Increased post-op complications
- Laparoscopy is the surgical method of choice also in the morbidly obese women

# Is Robotic Surgery an Advantage?



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# Is Robotic Surgery an Advantage?

- Increases the number of MIS procedures substantially
- Short(er) learning curve compared to laparoscopy
- Allows more complex procedures (radical hysterectomy, lymph node removal)
- Ergonomics
- More expensive compared to laparoscopy
- Conversion rate?

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# Conclusions

- Obesity contributes substantially to overall mortality
- 41% of all endometrial cancers due to excess BMI
- Relative deficiency of progesterone and excess estradiol
- Inverse relationship between BMI and biological malignancy
- BMI does not influence survival but QoL
- Laparoscopy wins the battle
  - Recommended in the obese, no upper BMI-limit

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# Conclusions

- Robotic surgery?
  - Expensive
  - Increases the fraction of minimal invasive procedures
    - short learning curve, easy to perform
  - Decreased number of conversions?
  - Better ergonomics

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# Thank you!

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