

A NON-SYSTEMATIC REVIEW OF MATERNAL OBESITY AND PREGNANCY-RELATED DEATH

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Malaysians most obese in region

13.3% obese

38.5% overweight

<https://www.nst.com.my/news/nation/2017/06/246538/malaysians-most-obese-region>



Is maternal obesity merely a cosmetic issue?

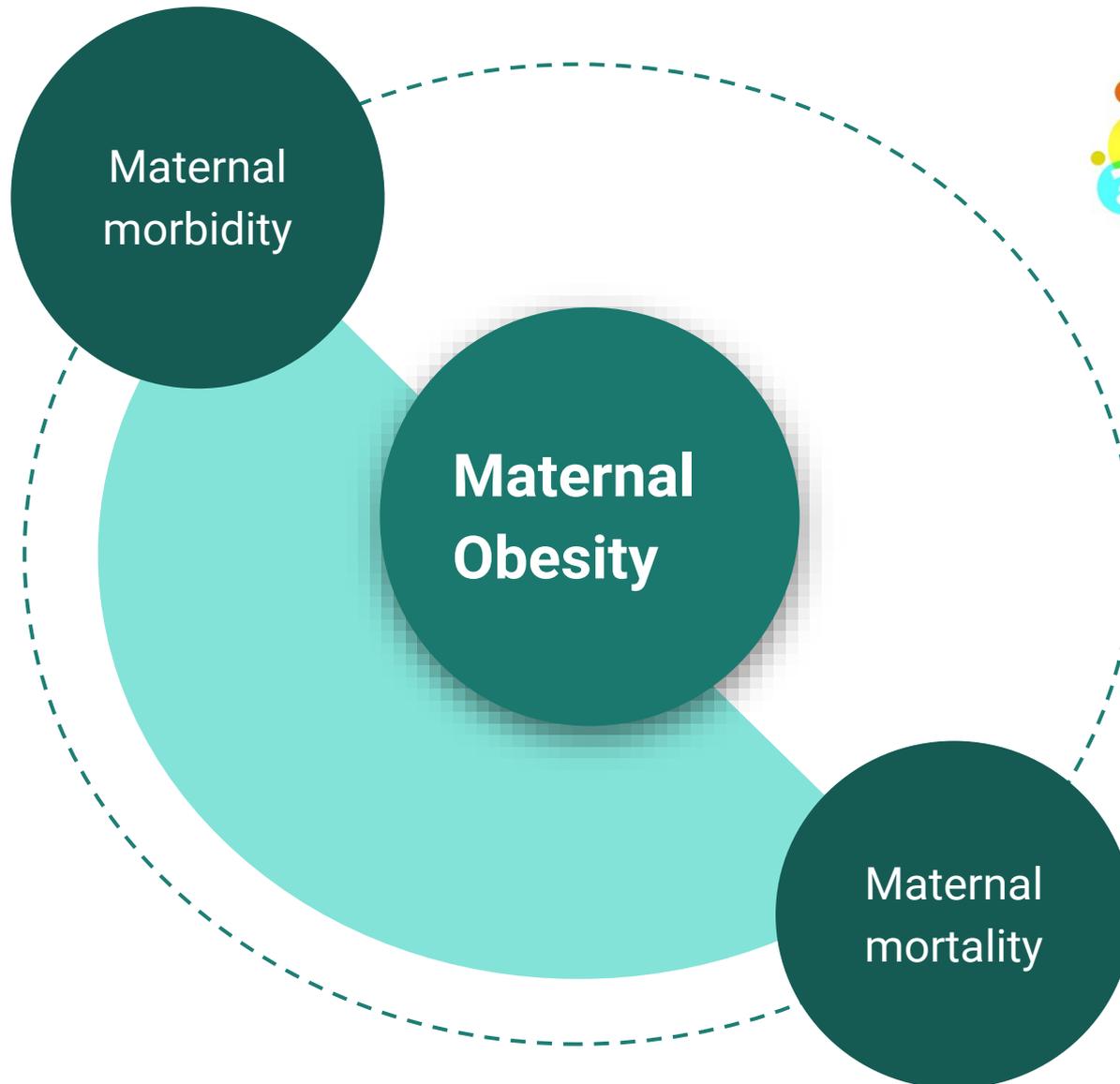


30%

Maternal deaths
worldwide

~Royal College of Obstetric & Gynecology





According to Royal College of Obstetric & Gynecology, [1]

Maternal obesity is defined as Body Mass Index (BMI) of 30kg/m² or more at the first antenatal visit

Class I: BMI 30.0-34.9

Class II: BMI 35.0- 39.9

Class III: BMI 40.0 and over



Definition of Pregnancy-Related Death (PRD) [2]

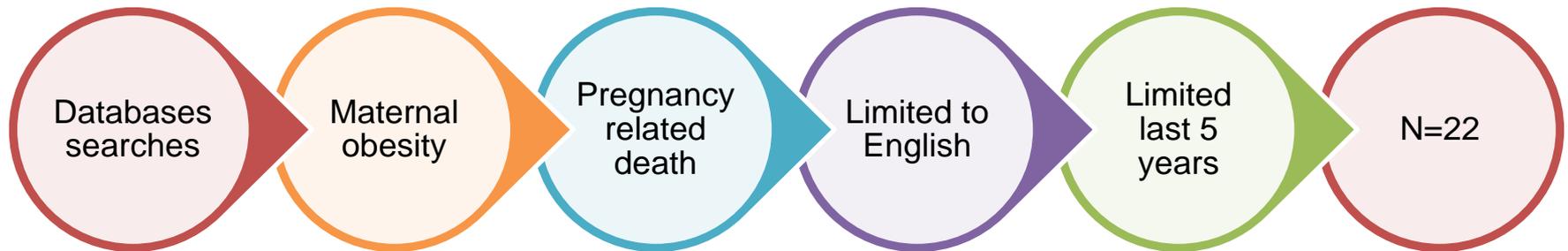
Pregnancy-Related Death (PRD) is defined as

death of a women during pregnancy or within one year postpartum, irrespective of the outcome, duration or site of pregnancy;

And the death could be from any cause related to or provoked by physiological changes in pregnancy or its management, but not from accidental or incidental causes



Search Process



Results and discussion



4 main causes of maternal deaths [2.5]

1

Cardiovascular
disease

2

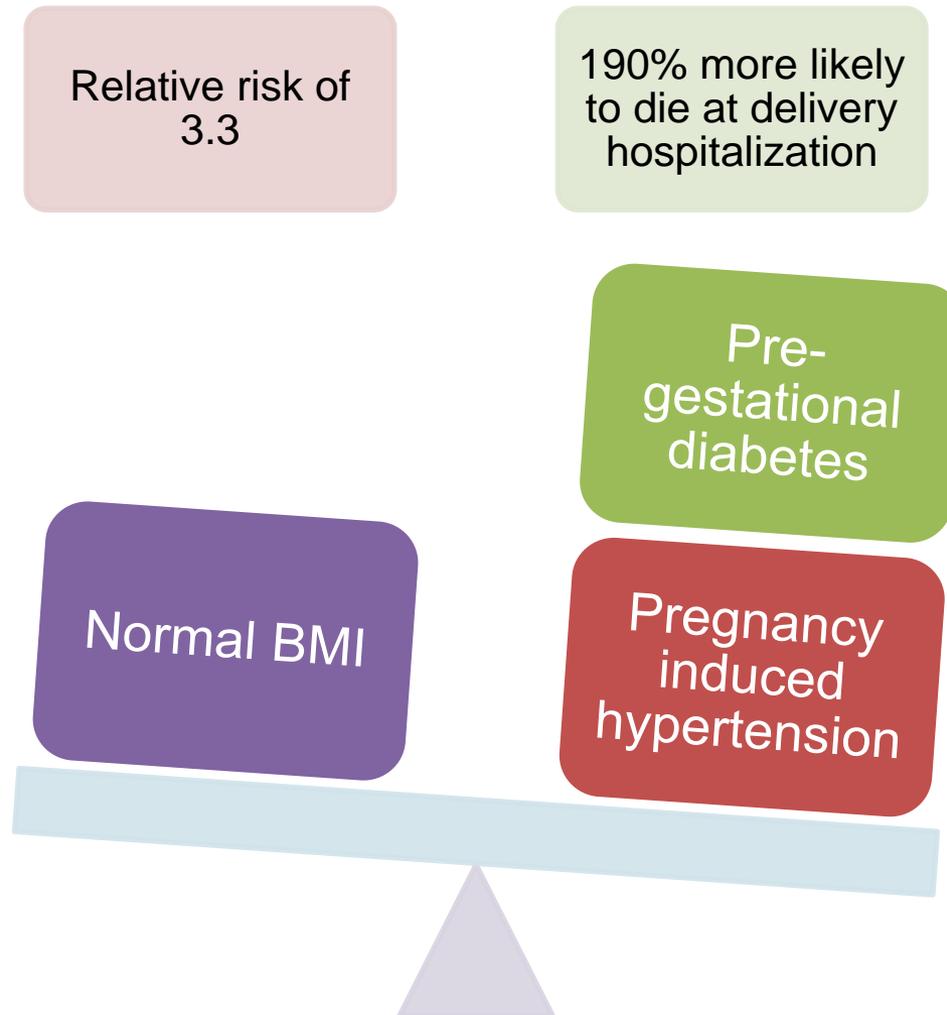
Pre-eclampsia or
eclampsia
haemorrhage

3

Venous
thromboembolism



Maternal Obesity and Cardiovascular Disease [5]



Lovney, K, et.al. in December 2017 [6]

In patients with high Body Mass Index,

- 5.5% were diabetic
- 19.3% were hypertensive
- 2.5% had both

In 10.5% of PRD

- 27.5% had PIH
- 13% had cardiovascular disorders
- 4.3% had diabetes



In Malaysia,

- Pregnancy-Induced Hypertension (PIH) including preeclampsia had contributed to about 18.1 % of maternal death in Malaysia (Kaur & Singh, 2011).
- **The most common causes of maternal death**
- PIH was accounted for 14.2% of the 966 maternal deaths between 1997-2000
- Preeclampsia was accounted for 4.1 % cases in Malaysia (Ng, 2005).
- In the year 2007, HDP including preeclampsia had contributed to about 18.1 % of maternal death in Malaysia (Kaur & Singh, 2011).



Obstructive Sleep Apnoea (OSA) and Pregnancy-Related Death (PRD) [7]

- Increase the risk of maternal sudden death or severe maternal morbidity during delivery hospitalization



UK Confidential Enquires into Maternal Deaths and Morbidity 2009-2012

- 27% of PRD in UK were obese
- Most frequent direct cause: Thromboembolism
- Most frequent indirect cause: Cardiovascular diseases





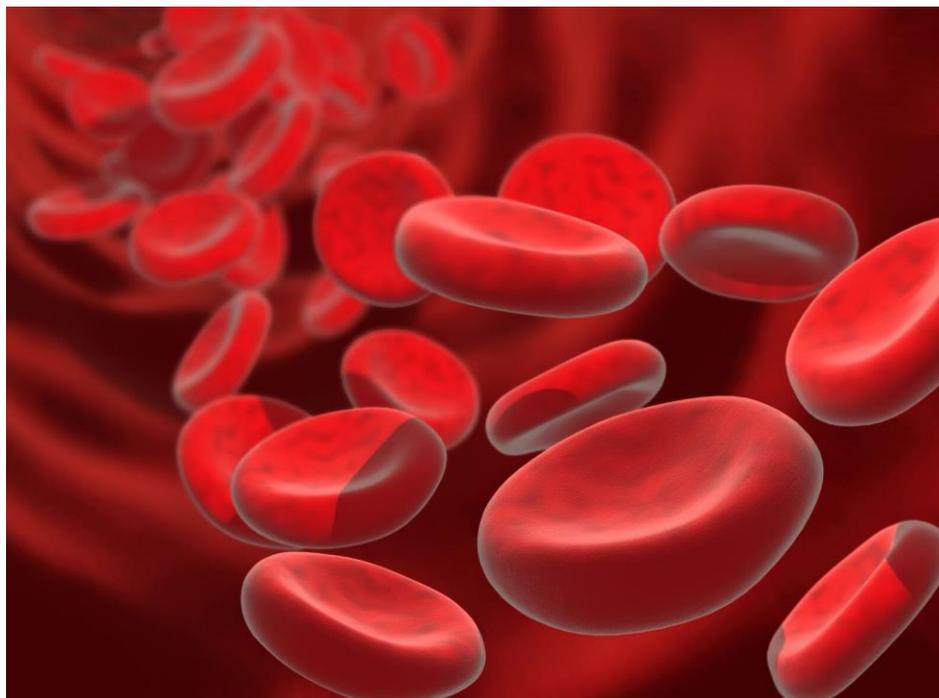
Image credit to
<https://globalnews.ca/news/3813807/obese-patients-in-parts-of-u-k-told-to-lose-weight-before-receiving-non-urgent-surgery/>



Secondary analysis of Michigan Experience [4]

- 4.87% of maternal outcome were PRD
- Incidence of VTE within six weeks is 3-7 per 10,000 deliveries





- Obesity and pregnancy both create a pro-inflammatory and pro-thrombotic environment
- Risk of abnormal clotting events and risk of maternal death increased
- No clear explanation for the interaction between maternal obesity and prothrombin environment





Ultrasound study of gestational and postural changes in the deep venous system of pregnant women's legs

- Increase in vessel diameter
- Reduction in flow velocity was observed

Image credit to <https://sonoworld.co.uk/cardio-vascular-ultrasound-scans/deep-vein-thrombosis-dvt-scan>





The most common organism that causes maternal death from sepsis in the United Kingdom is Group A Streptococcal Infection [8]

The most common causes of maternal mortality in Sub-Saharan Africa (30.9%) [9]

Obesity is a known state of immunocompromised although the mechanism behind this relationship is unknown [8]



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For Every Woman Who Dies In Childbirth Fetuses grow differently in obese women

Reuters | December 4, 2017

Obese women had significantly heavier babies than other women, a difference that emerged starting at 30 weeks' gestation and persisted throughout the rest of the pregnancy.

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Jun 13, 2016

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Conclusion

This study highlights maternal obesity contributes to increase in pregnancy-related deaths.

Strategies to optimize weight before pregnancy and to increase the public awareness are urgently needed!



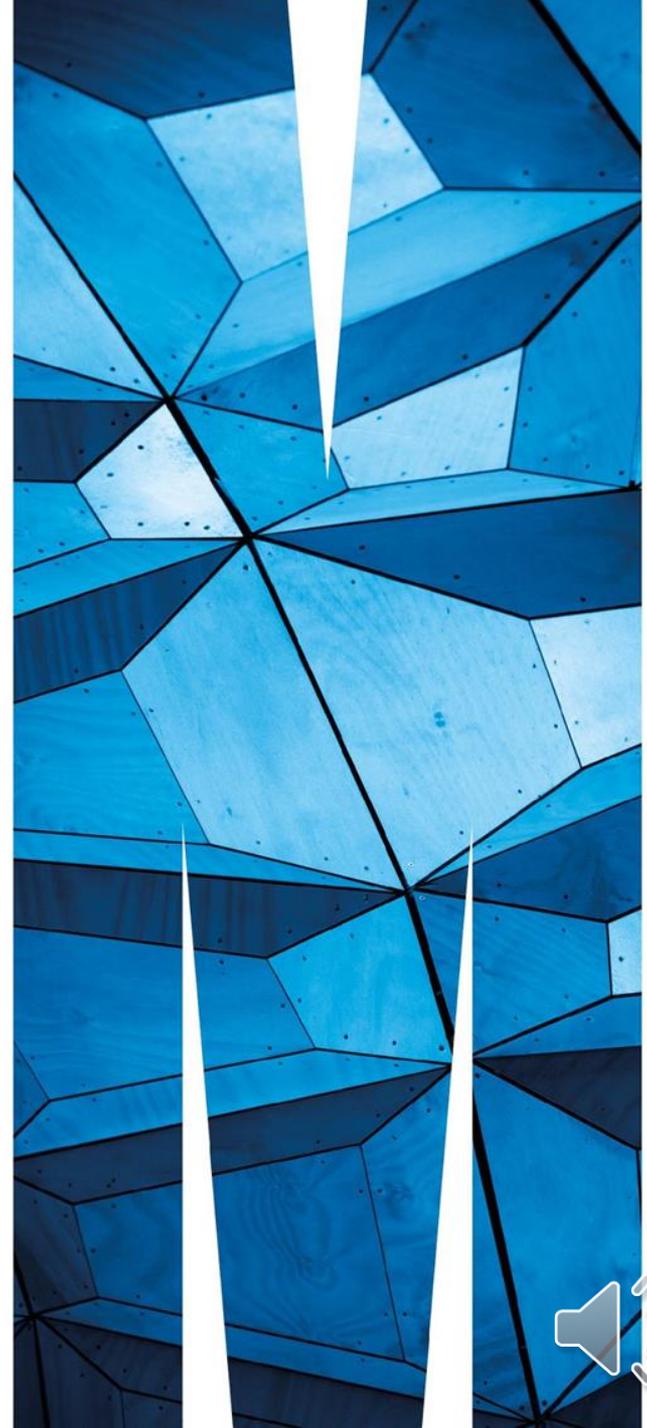
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The Hand that Rocks the Cradle is the hand that Rules the World



Thank you !



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