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MINIMAL ACCESS METABOLIC & BARIATRIC SURGERY CENTRE
MAX HEALTHCARE
SAKET, NEW DELHI (INDIA)
Obesity & Metabolic Syndrome
“Indian Perspective”

Globesity

Global Epidemic
Obesity & Metabolic Syndrome
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Obesity & being overweight now kill more people than hunger does.

World Health Organization
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What is obesity?

...a disease of excess fat storage with a number of associated diseases, known as co-morbidities.

It is also...

• multi-factorial (many different factors can cause obesity)
• life-long
• progressive
• potentially life-threatening
• costly
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• When should obesity be treated?
• Quantification of obesity

\[
\text{BMI} = \frac{\text{Body weight (Kg)}}{\text{Height (in m}^2)}
\]
**Bariatric Recommendations**

<table>
<thead>
<tr>
<th>WHO CRITERIA</th>
<th>RECOMMENDATION FOR ASIANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Less than 25 kg per m²</td>
</tr>
<tr>
<td>Overweight</td>
<td>More than 25 kg per m²</td>
</tr>
<tr>
<td>Obese</td>
<td>More than 30 kg per m²</td>
</tr>
<tr>
<td>Severe Obesity</td>
<td>More than 35 kg per m²</td>
</tr>
<tr>
<td>Morbid Obesity</td>
<td>More than 40 kg per m²</td>
</tr>
</tbody>
</table>

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What does obesity look like? *based on female 5’4” tall

Normal Weight (BMI 19 to 24.9)
130# BMI 22

Overweight (BMI 25 to 29.9)
152# BMI 26

Obese (Class I) (BMI 30 to 34.9)
175# BMI 30

Obese (Class II) (BMI 35 to 39.9)
205# BMI 35

Morbidly Obese (BMI 40 or more)
234# BMI 40
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Why obesity on the rise in INDIA

- Growing affluence & urbanization
- Sedentary lifestyles
- Poor dietary habits
- 5% of population consumes 40% of available fat
- ? Genetic (Thrifty gene hypothesis)
- Religion
- Social Practices (Pregnancy, postpartum ghee rich diet)
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Four environmental changes

• Altered food supply
• Decreased physical activity
• Stress and distress
• Drugs

“Those four categories of changes in the environment are so profound that they create the perfect storm for re-regulating energy balance, re-regulating set point, and creating obesity.”
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- Sleep Apnoea
- Dyslipidemia
- Diabetes
- Arthritis
- Gall stone
- Coronary Heart Disease
- Hypertension
- Cancer
- Morbid Obesity
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Obesity

Metabolic Syndrome
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The Metabolic Epidemic

- 50 million Diabetic patient in the India

- 93% of all diabetics have Type II DM

- Over 50% of type II diabetic patients are Obese

- Obesity increases the risk of diabetes by 40 fold

Arch Intern Med 2003;163:2146-2148.
NIDDK web site, 2003
Endocrine physiology, Balint Kacsoh, 2000
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Obesity Increases Risk For Diabetes Most
(BMI ≥ 35)

Field AE, Arch Intern Med 2001;161:1581-6
77,690 females and 46,060 males adjusted for age, smoking, race, 10-year risk
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BMI

Surgery

Pharmacotherapy

Lifestyle Modification

Diet

Physical Activity
Slow and steady weight loss is the only way to avoid "yo-yo" dieting, where you lose a lot of weight quickly only to regain it back.

Yo-Yo Dieting
Sleeve Gastrectomy

- Good weight loss
- Irreversible
- Restriction only
- Primary / staged surgery
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Sleeve Gastrectomy
Obesity & Metabolic Syndrome
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Roux-en-Y Gastric Bypass

- Good weight loss
- Irreversible
- Malabsorption and restriction
- Gold standard
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Gastric Bypass
Obesity & Metabolic Syndrome
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Rates of Remission of Diabetes

Adjustable Gastric Banding
48% (Slow)

Roux-en-Y Gastric Bypass
84% (Immediate)

Biliopancreatic Diversion
>95% (Immediate)
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Type II DM

? An operable intestinal disease
(A provocative yet reasonable hypothesis)

Francesco Rubino Obesity Surgery Jan 2008
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How does Bariatric Surgery Resolve Diabetes?

Is it just weight loss?

Is there is something else?
Improvement in glucose metabolism is obtained long before significant weight loss appears.

Mason EE Obes Surg (2005)
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Normal

Incretin  Anti-incretin

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Type II Diabetes

Incretin

Anti-incretin
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Proximal Gut Hypothesis
Roux-en-Y Gastric bypass
Resolution of Type II Diabetes

Incretin Anti-incretin
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- Dyslipidemia, hypercholesterolemia 63% resolved
- Metabolic syndrome 80% resolved
- Type II diabetes mellitus 83% resolved
- Obstructive sleep apnea 74%-98% resolved
- Hypertension 52%-92% resolved

Cleveland Clinic Journal of Medicine, Dec 2006

Quality of life improved in 95% of patients
Mortality 89% reduction in 5-year mortality
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First Institute in India to be recognized as an International Centre of Excellence in Bariatric Surgery.

The ICE program is administered by the Surgical Review Corporation, USA.
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