Energy and Women’s Health
some key issues

CR Soman
Low energy fuels compound health problems of women

- Firewood and cow dung are low energy household fuels
- More energy has to be spend by the housewife in relation to the fuel
- Low energy fuels used in Indian households are worst indoor pollutors
Indoor pollution and human health

Indoor pollution is related to

- acute respiratory illness
- Asthma
- COPD
- ? Coronary heart disease
- ? Cancers

A polluted environment causes psychological stress
Fetching low efficiency fuel demands extra energy

Energy requirement of women increase if they spend long hours fetching fuel and water
Energy equation in human lives

Energy is neither created nor destroyed
*(Law of thermodynamics)*

Energy input = Energy output manifests as heat, work and storage as energy rich nutrients

Input energy is exclusively from the food that we eat
Energy providing nutrients of food

- Carbohydrates – sugars and starches
- Proteins – animal and vegetable
- Fats – animal and vegetable

- 1 gm of carbohydrates provides 4 Kcal
- 1 gm of proteins provides 4 Kcal
- 1 of fat provides 9 Kcal
Kilo calorie is the conventional unit of energy transactions in living organisms

- 1 Kcal = 1000 physical calories
- SI unit of energy is Joule
- 1 calorie = 4.184 joule
- 1 Kcal = 4184 Joules
Components of human energy requirement

- Resting requirement
- Requirement related to occupation
- Requirement related to non-occupational activities

For calculation purposes experts allowed 8 hours each to these three categories
Resting requirement of energy

Energy needed to ensure smooth functioning of the cells, tissues and organs

Cells utilise energy during every movement of their existence.

They carry out work – electrical, osmotic and mechanical – for survival
Resting energy requirement is similar for people of diverse ethnic origins

- Men have 5 – 10 % extra energy requirement for unit surface area.
- Women have less metabolising mass.
- During growth resting energy requirement gets higher - children need more resting energy for unit surface area than adults.
A major component of energy requirement is occupational energy need

Idyll occupations demands less energy
Physically demanding occupations bring in greater demands on energy
The great Indian dilemma

Energy consumption in people with idyllic occupations far exceed that of people who need much higher energy input on account of increased physical activity.
Energy requirement distribution
The energy requirement of the Indian women is declining steadily.

However, the food availability has shown steady improvement over the years.

Reason for declining energy needs:

- Improved transportation
- More gadgets for assist energy demanding jobs
- Greater access to amenities like water
- Improved access to efficient fuels
- More labour regulations with control working hours
- Greater recreational opportunities
The energy content of Indian diet is rising

- Access to cheap junk foods
- Increasing consumption of fats and oils
- Greater access to subsidized food
- Greater awareness on nutrition and health
This imbalance is creating a new health problem for women

- The burden of malnutrition is shifting from under-nutrition (under-weight) to over nutrition and obesity
Changes in underweight and overweight in Kerala 1956-2006

Underweight

Overweight

1956 2005

1956 2005
Prevalence of overweight in men and women – Kerala*

* Prolife- ongoing studies