

Fibre

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Workshop held on 30th March 2005

What will be Covered

- What is Fibre
- Definitions and applications
- Health implications of fibre
- New concepts
- Commercial uses
- Future directions

**REFINED CARBOHYDRATE
FOODS and DISEASE**
Some Implications of Dietary Fibre

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1975



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Carbohydrates in Human Nutrition

- “A classification based purely on chemistry does not allow a ready translation into nutritional terms since the major classes of carbohydrate have a variety of physiological effects.”

Carbohydrates in Human Nutrition

- “However, a classification based on physiological properties also creates a number of problems in that it requires a single property to be considered over ridingly important and to be used as the basis of the classification.”
- “This dichotomy has lead to the introduction of a number of terms to describe various fractions and sub-fractions of carbohydrate”

Milestone: Available and Unavailable Carbohydrates, introduced in 1929.

- Introduced by McCance and Lawrence, 1929, to differentiate available carbohydrates, i.e. reducing sugars, sucrose and starch, that affected the blood glucose levels, and unavailable carbohydrates, that did not.
- Unavailable carbohydrates determined as residue after enzymatic treatment corrected for protein and ash, “mainly hemicellulose and fibre (cellulose)”.
- FAP/WHO Report 1998 “more appropriate... to describe carbohydrates as either **glycemic** (i.e. providing carbohydrates for metabolism) or **non-glycemic**, which is closer to the original concept...”

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Definitions of Dietary Fibre

- Hipsley, 1953: “Plant cell-walls”
- Trowell, 1972, 1974: “Skeletal remnants of plant cells that are indigestible” or “that portion of food which is derived from cellular walls of plants which is digested very poorly in human beings”
- Trowell, 1976:... “polysaccharides and lignin not digested in the human small intestine”

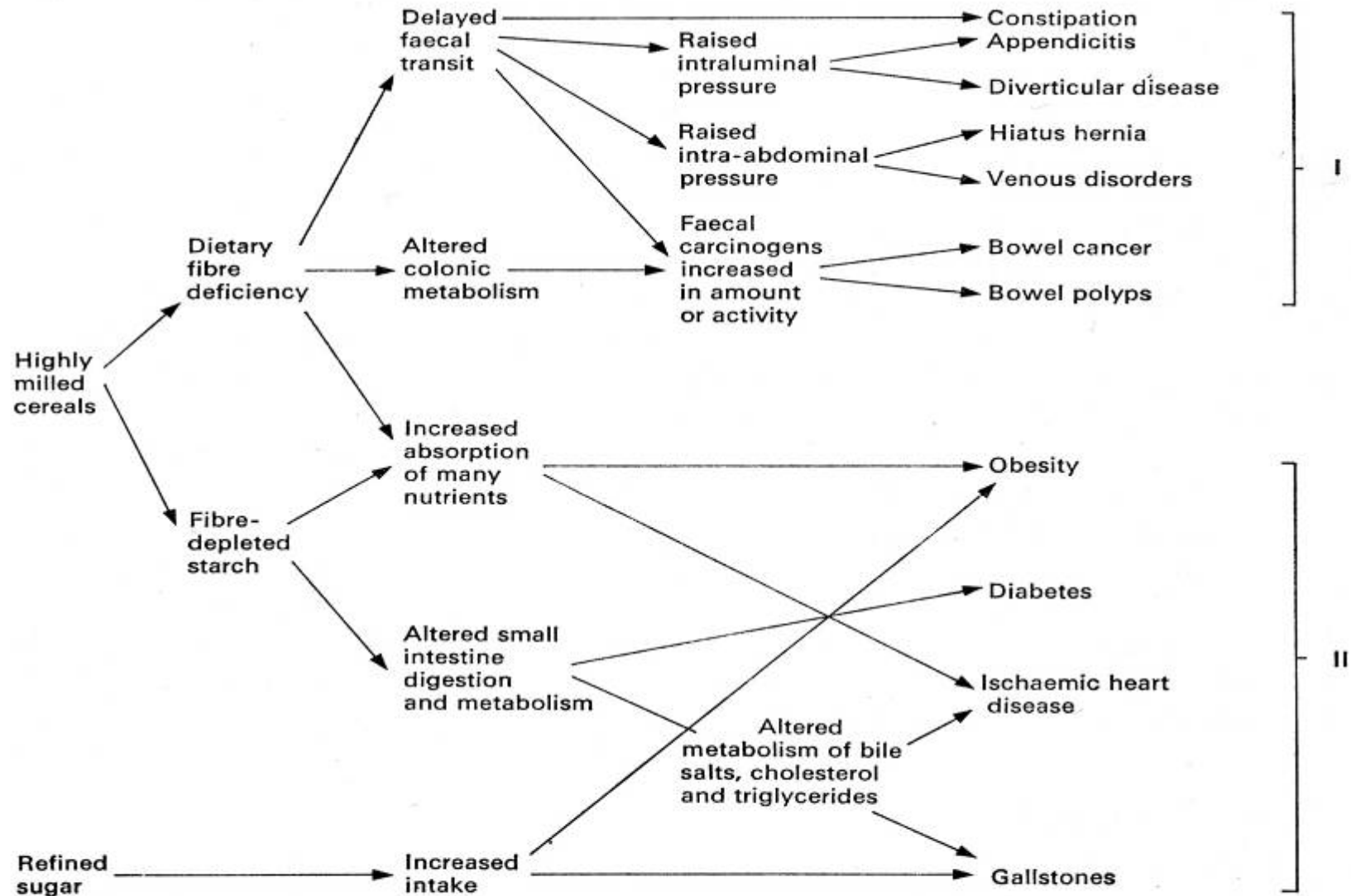


FIG. 21.2. Diagrammatic representation of the mechanisms whereby the diseases listed are postulated to result from the consumption of fibre-depleted carbohydrate foods.