

Introduction

- **Cardiovascular disease (CVD)**
 - Disease of the heart and blood vessels
 - Disease of the arteries of the heart is called *coronary heart disease (CHD)*

Usefulness of Fats in the Body

- Fat

- Body's chief storage form for the energy from food eaten in excess of need
 - Valuable survival mechanism for people who live a feast-or-famine existence
- Provide most of the energy needed to perform much of the body's work
 - Especially muscular work

Usefulness of Fats in the Body

- Most body cells can store only limited fat
 - some cells are specialized for fat storage
 - These fat cells seem to expand indefinitely
 - The more fat they store, the larger they grow
 - Adipose (fat) tissue secretes hormones and produces enzymes that influence food intake and affect the body's use of nutrients

Usefulness of Fats in the Body

- Glucose, in the form of glycogen, is not the body's major form of energy storage
 - Glycogen stores a large amount of water
 - Therefore it is heavy and bulky
 - Thus, the body cannot store enough to provide energy for very long

Usefulness of Fats in the Body

Preview from Notesale.co.uk
Page 16 of 66

- Other functions of fat
 - Shock absorbers
 - Pads of fat surround vital internal organs
 - Thermoregulation
 - Fat pads under the skin insulate the body from extremes of temperature
 - Cell membranes
 - Lipids are a component of cell membranes



© 2006 Wadsworth - Thomson



Preview from Notesale.co.uk
Page 19 of 66



Carbohydrate-rich lunch

1 low-fat muffin
1 banana
2 oz carrot sticks
8 oz fruit yogurt

calories = 550
weight (g) = 500

Fat-rich lunch

6 butter-style crackers
1¹/₂ oz American cheese
2 oz trail mix with candy

calories = 550
weight (g) = 115

Saturated versus Unsaturated Fatty

Acids

- Olive oil

- Rich in monounsaturated fatty acids
- Evidence from Mediterranean regions suggests that olive oil confers a degree of protection against heart disease when it is used in place of other fats
- Dark-colored olive oils also deliver valuable phytochemicals

Digestion and Absorption of Fats

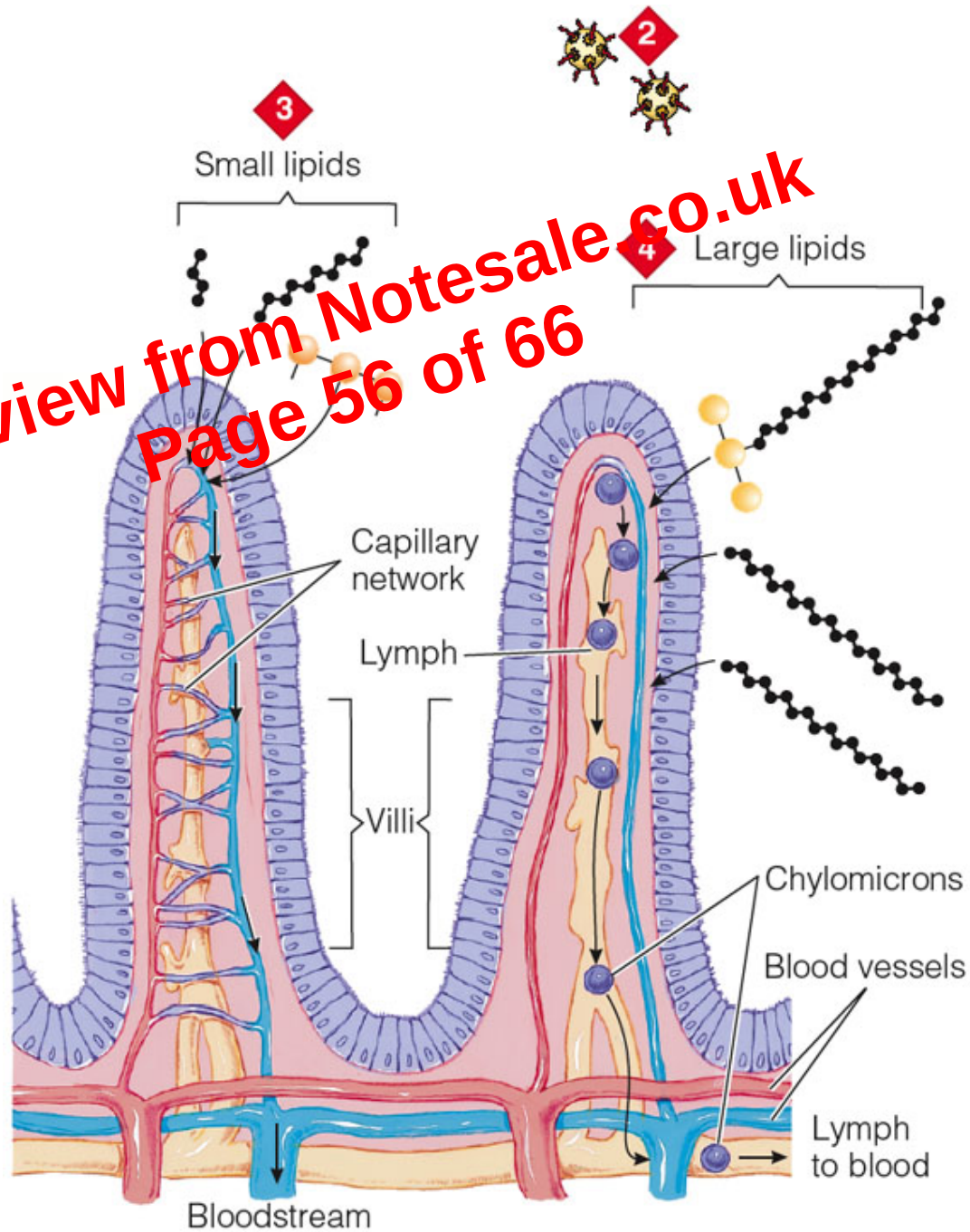
- Stomach

- Fat separates from the watery components and floats as a layer on the top

Digestion and Absorption of Fats

- The digestive tract absorbs triglycerides from a meal with up to 98% efficiency
 - i.e. little fat is excreted by a healthy system
- The process of fat digestion takes time
 - The more fat taken with a meal, the slower the digestive system becomes

Preview from Notesale.co.uk
Page 56 of 66



Transport of Fats

- Shorter products of lipid digestion
 - Glycerol and short-chain fatty acids pass directly through the cells of the intestinal lining into the bloodstream
 - Travel unassisted to the liver