



## Timing counts with meals, supplements

It is a common saying that timing is everything. When it comes to staying healthy, the timing of eating and drinking can make a difference.

**Question:** Does a person really need breakfast?

**Answer:** Although many people function adequately without breakfast, they might do better with at least some food.

After a night of sleep, the body's storage of sugar is mostly depleted and it becomes more difficult to maintain normal levels of blood sugar. Because the brain relies on blood sugar for energy, skipping breakfast can make it more difficult to concentrate.

**Q:** Is it best to eat three meals a day?

**A:** Eating three meals a day seems to work best for most people. This eating style allows time for nutrients in foods to be digested and absorbed before the next major meal is consumed. However, two meals a day or four meals a day can work as well for some people.

The potential problem with eating only one or two meals is that large meals are needed to

meet nutrient needs. Larger meals stimulate increased levels of insulin, which tends to increase appetite and trigger over-eating.

Also, many people feel more tired after a large meal, probably because of the increased blood flowing to the intestines to transport digested nutrients throughout the body. This may shift blood flow away from the brain, causing tiredness.

**Q:** Is "grazing" -- eating small amounts of a variety of foods frequently throughout the day -- the best way to eat?

**A:** Part of the rationale for grazing is that blood sugar and insulin levels stay stable. But when grazing involves mindless frequent snacking, that adds up to excess calorie intake. Also, grazing on foods containing sugars, starches and fruit acids can increase the level of acids around the teeth, resulting in the erosion of tooth enamel. Flushing the mouth with water after snacking and frequent tooth-brushing can reduce the risk.

**Q:** Should salad be eaten before or after a main meal?

**A:** It doesn't matter. Everything you eat goes first to the stomach, where it all mixes together. The contents of the stomach are released into the upper intestine very slowly, at a rate of only 1 to 2 teaspoons per minute. Foods in a meal eaten within 30 to 60 minutes all mix together. Also, the various enzymes in the stomach and intestines can digest many different food components at the same time.

**Q:** Is it bad to drink water with meals?

**A:** Quite the opposite. Adequate water in the intestine enhances normal digestion and absorption of nutrients.

**Q:** When should vitamin and mineral supplements be taken?

**A:** Most nutrients in supplements are absorbed better when taken with meals. However, it is best to avoid taking a separate calcium supplement at the same time as other pills because calcium can interfere with the absorption of other minerals, such as iron and zinc.

Also, consult your pharmacist about timing dietary supplements with medications.

---

Alan Titchenal, Ph.D., C.N.S. and Joannie Dobbs, Ph.D., C.N.S.  
are nutritionists in the Department of Human Nutrition, Food and Animal Sciences,  
College of Tropical Agriculture and Human Resources, UH-Manoa.  
Dr. Dobbs also works with the University Health Service