

## Vitamins Committee

Matta, Jaimé (Chair)	jmatta@psm.edu
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<b>Recommended Curriculum Equivalent: 2.0 hr</b>		
<b>Vitamin Classes and Vitamins to consider</b>		
Lipid soluble vitamins	Water soluble vitamins	
Vitamins A, D, E, K	Vitamin C, nicotinamide, cyanocobalamin, pyridoxine	Nicotinic acid, folic acid
<b>Learning Objectives</b>		
<b>Physiology and pathophysiology</b> <ul style="list-style-type: none"><li>• Distinguish between vitamins and antioxidants.</li><li>• Define what antioxidants are and provide examples of at least five types of endogenous antioxidant compounds present in the human body.</li><li>• Identify what are some of the populations (e.g. elderly, alcoholics, pregnant women) that have the highest risk of having some form of vitamin deficiency.</li><li>• Understand the vitamin deficiency related problems that are commonly found in persons that chronically abuse ethanol.</li></ul>		
<b>Mechanism of action</b> Explain the mechanism of action of the water-soluble and lipid-soluble vitamins.		
<b>Actions on organ systems</b> Describe the pharmacological and non-pharmacological effects of the deficiency of each of these water and lipid-soluble vitamin types as they relate to disease processes.		
<b>Adverse effects and toxicities</b> <ul style="list-style-type: none"><li>• Describe the principal adverse effects and toxicities for overdose and toxic levels of both water-soluble and lipid-soluble vitamins.</li><li>• Describe the clinically important drug interactions of the drugs in each class.</li><li>• Describe the principal contraindications of the drugs in each class.</li></ul>		
<b>Therapeutic uses</b> <ul style="list-style-type: none"><li>• Know how vitamins are regulated (The Dietary Supplement Health and Education Act of 1994).</li><li>• Know key concepts of the 2005 Dietary guidelines recommended by the FDA for using vitamin supplements.</li><li>• Know what are the recommended 2005 Dietary guidelines for achieving optimal vitamin supplementation strategies in sensitive populations.</li></ul>		

- Define what is meant by Recommended Dietary Allowances (RDA) in relation to vitamin use.
- Describe the therapeutic uses of the fat-soluble vitamins including that of tretinoin (a vitamin A analogue)
- Describe the use of thiamine in the emergency treatment of alcoholism.

### Notes

- Identify at least three reliable sources (internet databases, CD-ROM) that provide information on vitamins and antioxidants. These include [www.health.gov/dietaryguidelines/dga2005/](http://www.health.gov/dietaryguidelines/dga2005/), <http://www.fda.gov/consumer/updates/vitamins111907.html#regulated>
- Starting December 22, 2007, any serious adverse events reported to vitamins and any dietary supplement manufacturer must be reported to FDA within 15 days of the manufacturer receiving the adverse event report. These can be reported directly to FDA through its MedWatch program at 1-800-FDA-1088 or online at [www.fda.gov/medwatch](http://www.fda.gov/medwatch)
- There exists considerable controversy over the benefits of sun exposure, its association with vitamin D plasma levels and effects in terms of cancer risk reduction.