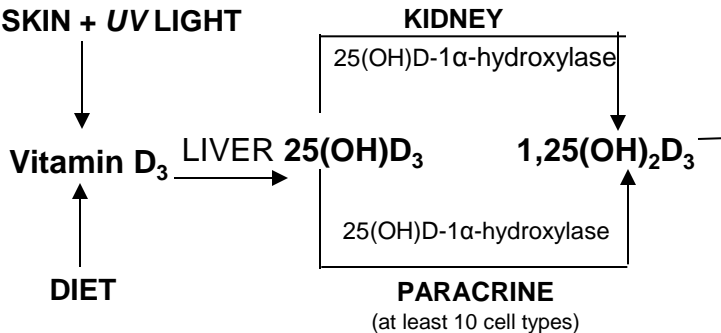


Norman, A.W. et al., Vitamin D nutritional policy needs a vision for the future. *Exp. Biol. Med.* **235**:1034 (2010).
 Norman, A.W. History of the discovery of vitamin D and its daughter steroid hormone. *Annals of Nutrition & Metabolism* **61**: 199- 206 (2012).

CONTRIBUTIONS OF VITAMIN D TO GOOD HEALTH



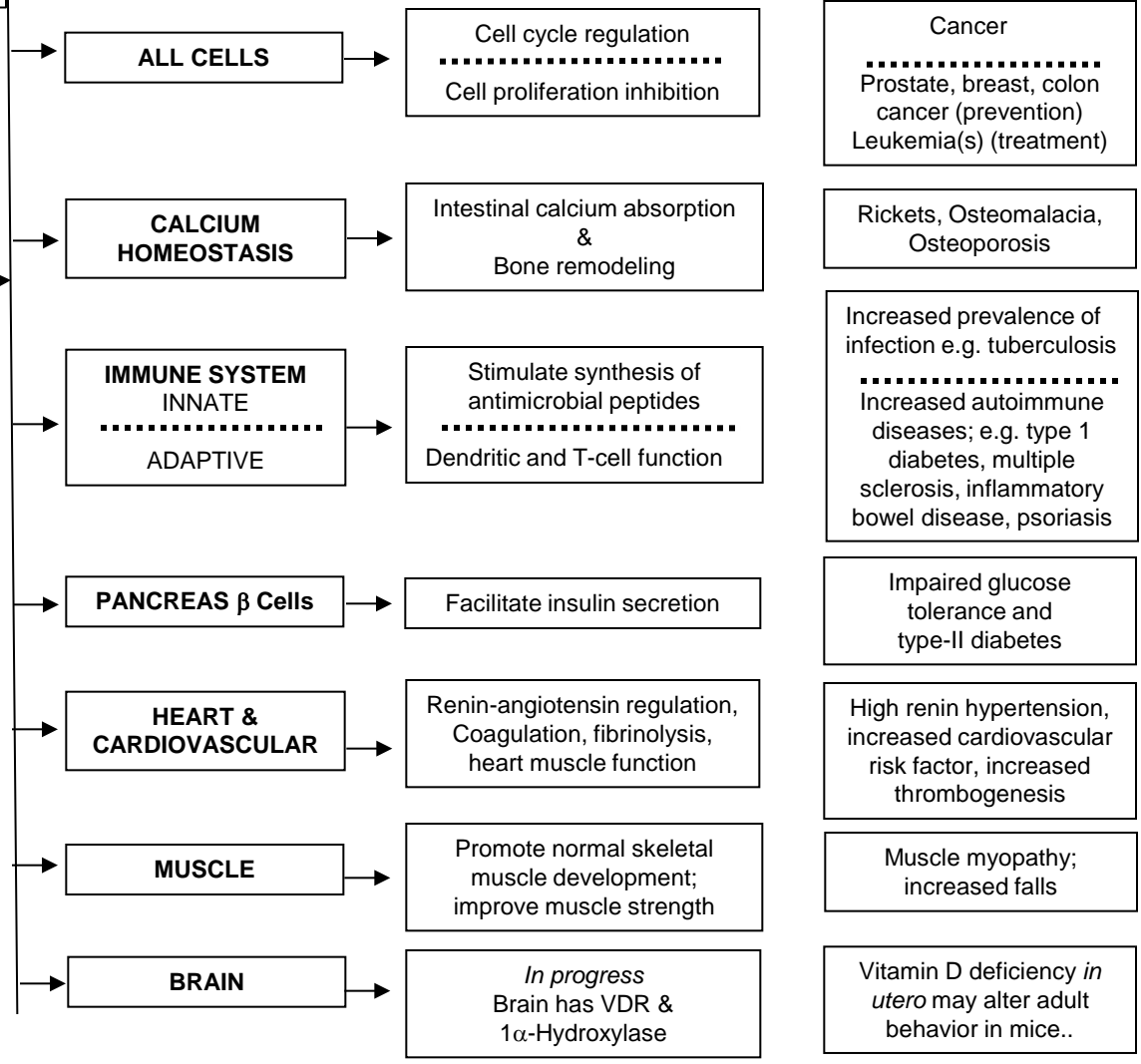
COMMENTS		
Vitamin D itself is biologically inactive. It is a precursor of 1α,25(OH) ₂ D ₃ .	Serum 25(OH)D ₃ is a marker of vitamin D nutritional status. Its serum level should be 40 – 70 ng/ml	1α,25(OH) ₂ D ₃ is a steroid hormone that produces biological responses via binding to its receptor (VDR) in at approx 30 tissues.

Serum 25(OH)D		Nutritional Descriptor
ng/ml	nmoles/L	
< 5	<12	Severe D deficiency
< 10	< 25	Vit. D deficiency
10 - 20	25 – 50	Vit D. insufficiency
40--70	100 - 150	Vit D. sufficiency
>150	>300	Risk for toxicity

PHYSIOLOGICAL SYSTEMS

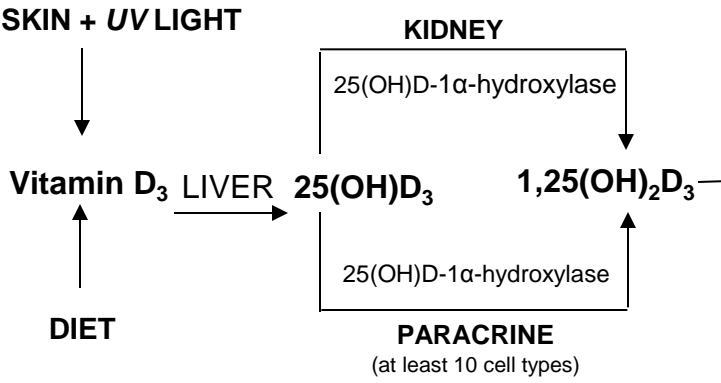
BIOLOGICAL RESPONSES

VITAMIN D DEFICIENCY RELATED DISEASES



New evidence indicates that vitamin D3 intake should be in the range of 2000 – 4000 IU/day. Everyone should have their serum 25(OH)D levels determined at least once yearly. Vitamin D3 gel capsules (2000 or 5000 IU), can be obtained from the Bio-Tech Pharmaca/al, Inc. or other vendors. More health information is available at , <http://www.grassrootshealth.org/index.php> [To contact A. W. Norman use >> Anthony.norman@ucr.edu]

CONTRIBUTIONS OF VITAMIN D TO GOOD HEALTH



COMMENTS

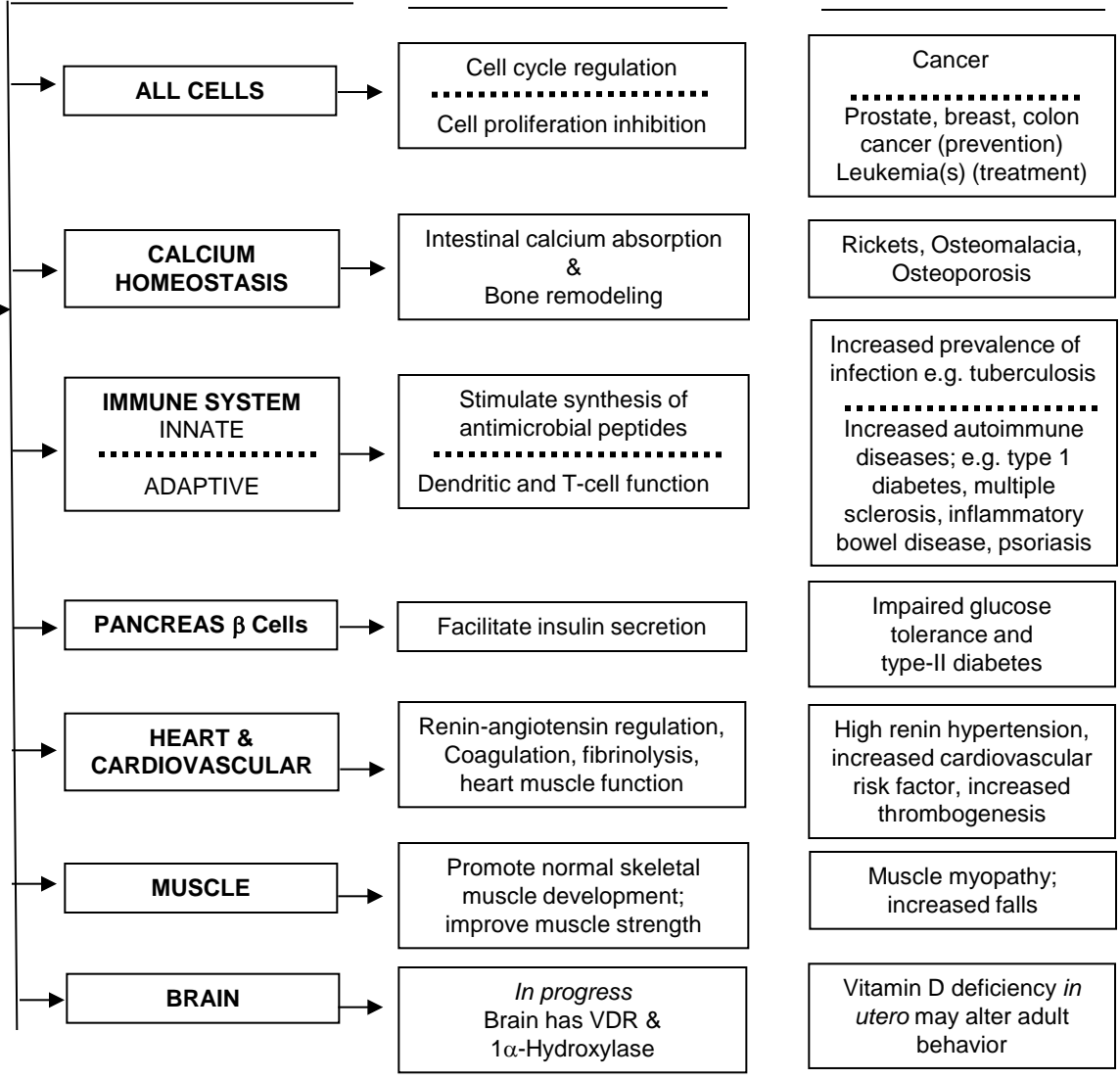
Vitamin D itself is biologically inactive. It is a precursor of 1α,25(OH) ₂ D ₃ .	Serum 25(OH)D ₃ is a marker of vitamin D nutritional status. Its serum level should be 40 – 70 ng/ml	1α,25(OH) ₂ D ₃ is a steroid hormone that produces biological responses via binding to its receptor (VDR) in at approx 30 tissues.
---	---	--

Serum 25(OH)D		Nutritional Descriptor
ng/ml	nmoles/L	
< 5	<12	Severe D deficiency
< 10	< 25	Vit. D deficiency
10 - 20	25 – 50	Vit D. insufficiency
40--70	100 - 150	Vit D. sufficiency
>150	>300	Risk for toxicity

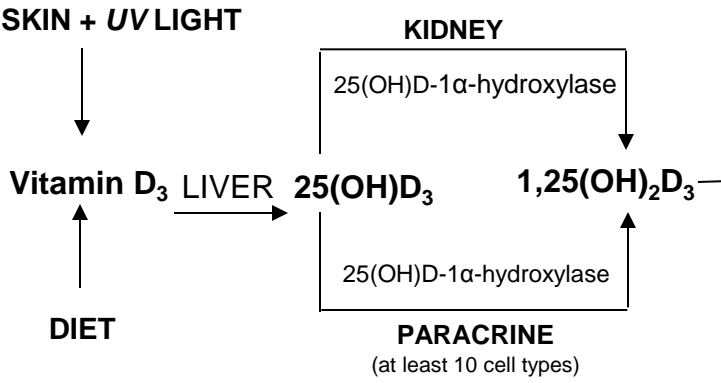
PHYSIOLOGICAL SYSTEMS

BIOLOGICAL RESPONSES

VITAMIN D DEFICIENCY RELATED DISEASES



CONTRIBUTIONS OF VITAMIN D TO GOOD HEALTH



COMMENTS

Vitamin D itself is biologically inactive. It is a precursor of 1α,25(OH) ₂ D ₃ .	Serum 25(OH)D ₃ is a marker of vitamin D nutritional status. Its serum level should be 40 – 70 ng/ml	1α,25(OH) ₂ D ₃ is a steroid hormone that produces biological responses via binding to its receptor (VDR) in at approx 30 tissues.
---	---	--

PHYSIOLOGICAL SYSTEMS

BIOLOGICAL RESPONSES

VITAMIN D DEFICIENCY RELATED DISEASES

