

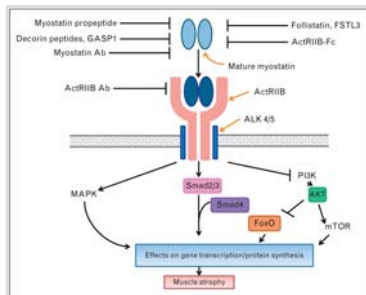
Cool Things in the Future: Muscle Anabolics



Measuring Muscle Mass + Bone Mass by DXA



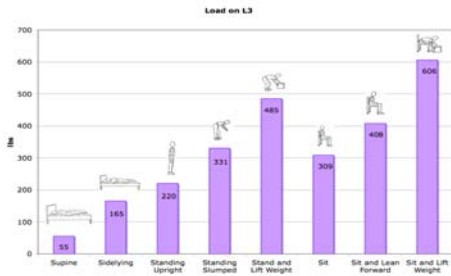
Myostatin Pathway



- Myostatin is a negative regulator of skeletal muscle mass via ActRIIB and related signal transduction paths¹
- Evidence to date suggests that blocking myostatin or ActRII may be an effective approach to treat muscle wasting²

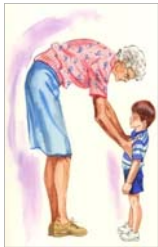
Ab, antibody; ActRIIB, activin type IIB receptor; ALK, activin-linked kinase; FSTL3, follistatin-like 3; GASP1, growth and differentiation factor-associated serum protein-1; MAPK, mitogen-activated protein kinase; PI3K, phosphoinositide 3-kinase.
 1. Smith RC et al. *Curr Opin Support Palliat Care*. 2013;7:352-60. 2. White TA et al. *Gerontology*. 2014 Jan 17 [Epub ahead of print].

Spine Load with Activity



Briggs AM, et. al., 2004 and 2007

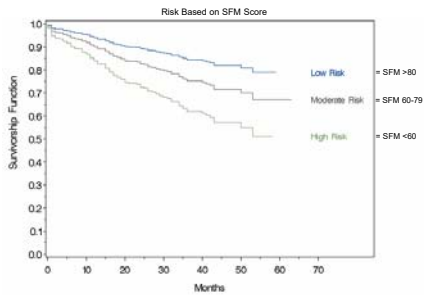
Safe Functional Motion (SFM)



- Assessment of Balance, Spine Loading, Strength and Flexibility
- Calculates Probability of Prior Fracture, Fall/ Injury
- Calculates Risk for Future Fracture, Fall/ Injury, Hospitalization
- Easy to Perform, Immediate Report Generation
- Evidenced Based, Reliable, Proven

Survival Analysis on Time (Months) to Incident Fx by SFM Risk

Subset Analysis: Age >= 50 Cox Proportional Hazards Regression



ASBMR 2010 Musculoskeletal Working Group Presentation Toronto Canada

Safe Functional Motion (SFM5) Predicts Fracture

Logistic Regression Analysis on Incident ANY fractures using sfm5
Patients with 1 year FU

	P-Value	Coefficient	Standard Error	Odds Ratio	95% Wald's Confidence Interval
Gender (M vs F)	0.9235	0.016	0.171	1.033	(0.528, 2.021)
Age	0.5733	-0.006	0.011	0.942 (unit= 10)	(0.767, 1.158)
Any Prevalent Fx (Yes vs No)	0.3017	0.114	0.110	1.256	(0.815, 1.937)
History of Injurious Falls (Yes vs No)	0.2612	0.173	0.154	1.414	(0.773, 2.589)
Femoral Neck BMD	0.0359	-1.943	0.927	1.215 (unit=-0.1)	(1.013, 1.456)
On Medication (No vs Yes)	<.0001	0.575	0.107	3.158	(2.072, 4.811)
SFM Score	0.0014	-0.017	0.005	1.183 (unit=-10)	(1.067, 1.311)

Odds Ratios are adjusted for all other effects in the model.
Number of Observations Used= 1298. Hosmer and Lemeshow Goodness of Fit chi-square= 6.324, p=0.611.
V:\Julie\Studies\SFM Data Programs\programs\SFM_FU_Times.sas ran February 25, 2015 at 13:55.

Safe Functional Motion (SFM5) Predicts Hospitalization

Logistic Regression Analysis on Inpatient Hospitalization within One Year Using sfm5

	P-Value	Coefficient	Standard Error	Odds Ratio	95% Wald's Confidence Interval
Gender (M vs F)	0.4102	-0.154	0.187	0.735	(0.353, 1.531)
Age	0.7377	0.004	0.011	1.037 (unit= 10)	(0.840, 1.280)
Prior Hosp (Yes vs No)	<.0001	0.565	0.110	3.094	(2.010, 4.763)
SFM Score	<.0001	-0.026	0.005	1.293 (unit=-10)	(1.168, 1.432)

Odds Ratios are adjusted for all other effects in the model.
Number of Observations Used= 1298. Hosmer and Lemeshow Goodness of Fit chi-square= 8.257, p=0.409.
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