![Belgian Society for GERONTOLOGY and GERIATRICS]

PHYSICAL PERFORMANCE
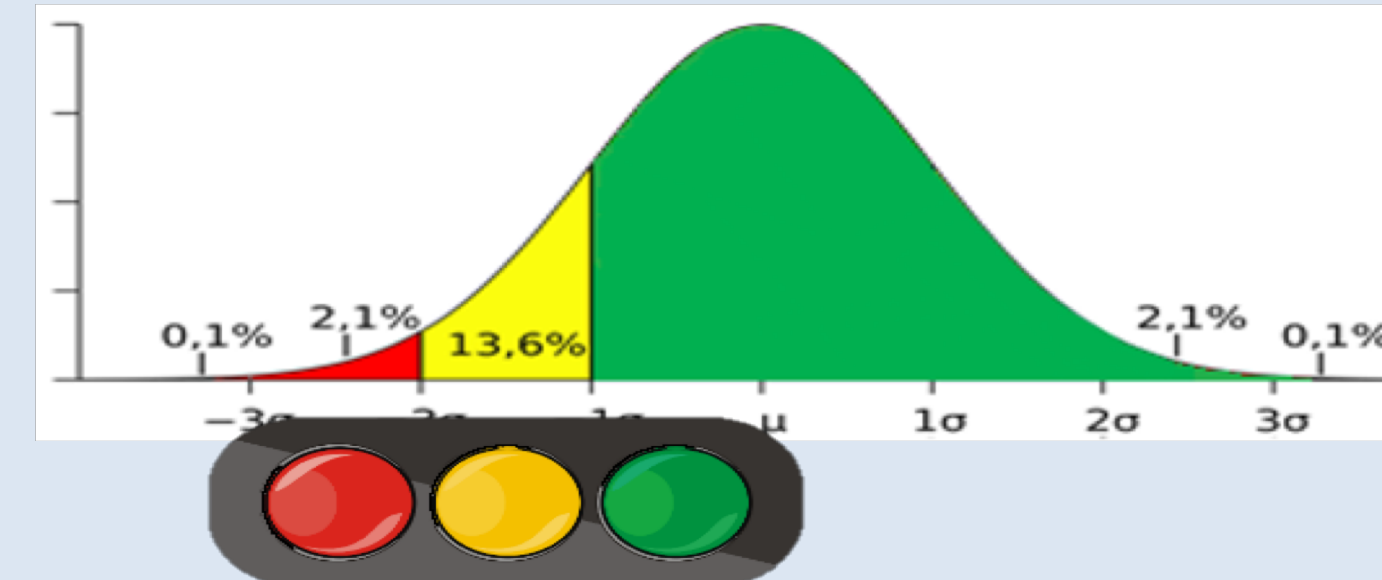## Sarcopenia Guidelines 2018 - Assessment

BVGG – SBGG

WHY?

Physical performance is one of the subdimensions of sarcopenia according to the EWGSOP. To assess physical performance in a clinical setting, to date best evidence is available for using gait speed. The proposed recommendation is aimed at the need to drive clinical action.

HOW?

An umbrella review on reference values for gait speed was performed.

- *Population*: young/healthy men and women (20-39)
- *Exposure*: gait speed
- *Outcome*: reference values
- *Study design*: systematic review, meta-analysis
- *Quality assessment*: AMSTAR checklist

DATA HANDLING

Initial search yielded 60 eligible reviews of which 2 were finally included.

Mean, standard deviation and number of participants was retrieved. Subsequently standard error, pooled degrees of freedom and pooled standard deviation was calculated.

Finally T-scores for both genders together were calculated.

> 👥 N = 882

> 🚶 Gait speed

> 📊 T-scores

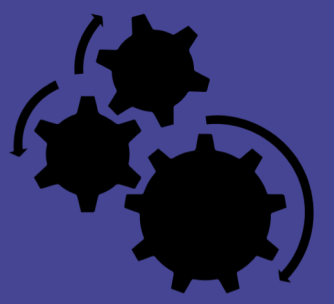| T-SCORE		
🔴	< -2	Out of the norm
🟡	-2 < X < -1	Action should be undertaken to prevent worsening
🟢	> -1	Healthy, within the norm

Study or Subgroup	Gait speed	SE	Weight	Gait speed IV, Random, 95% CI
Al-Obaidi 2003 (men 20)	1.217	0.051	2.3%	1.22 [1.12, 1.32]
Al-Obaidi 2003 (women 20)	1.082	0.038	2.5%	1.08 [1.01, 1.16]
Auvinet 2002 (men 20)	1.6	0.027	2.6%	1.60 [1.55, 1.65]
Auvinet 2002 (men 30)	1.5	0.024	2.6%	1.50 [1.45, 1.55]
Auvinet 2002 (women 20)	1.5	0.024	2.6%	1.50 [1.45, 1.55]
Auvinet 2002 (women 30)	1.6	0.021	2.7%	1.60 [1.56, 1.64]
Blanke 1989 (men 20)	1.3	0.052	2.3%	1.30 [1.20, 1.40]
Ble 2005 (men 20)	1.31	0.038	2.5%	1.31 [1.24, 1.38]
Ble 2005 (men 30)	1.375	0.033	2.5%	1.38 [1.31, 1.44]
Ble 2005 (women 20)	1.266	0.044	2.4%	1.27 [1.18, 1.35]
Ble 2005 (women 30)	1.256	0.027	2.6%	1.26 [1.20, 1.31]
Bohannon 1997 (men 20)	1.393	0.04	2.4%	1.39 [1.31, 1.47]
Bohannon 1997 (men 30)	1.458	0.026	2.6%	1.46 [1.41, 1.51]
Bohannon 1997 (women 20)	1.407	0.037	2.5%	1.41 [1.33, 1.48]
Bohannon 1997 (women 30)	1.415	0.026	2.6%	1.42 [1.36, 1.47]
Busse 2006 (men 30)	1.538	0.048	2.3%	1.54 [1.44, 1.63]
Busse 2006 (women 20)	1.499	0.049	2.3%	1.50 [1.40, 1.60]
Busse 2006 (women 30)	1.381	0.063	2.1%	1.38 [1.26, 1.50]
Button 2005 (men 20)	1.474	0.033	2.5%	1.47 [1.41, 1.54]
Button 2005 (men 30)	1.432	0.036	2.5%	1.43 [1.36, 1.50]
Button 2005 (women 20)	1.448	0.054	2.2%	1.45 [1.34, 1.55]
Delval 2006 (men 20)	1.353	0.028	2.6%	1.35 [1.30, 1.41]
El Haber 2008 (women 20)	1.3	0.032	2.5%	1.30 [1.24, 1.36]
El Haber 2008 (women 30)	1.3	0.038	2.5%	1.30 [1.23, 1.37]
Goble 2003 (men 20)	1.38	0.036	2.5%	1.38 [1.31, 1.45]
Hageman 1986 (women 30)	1.6	0.044	2.4%	1.60 [1.51, 1.69]
Haghani 2000 (men 20)	1.44	0.079	1.8%	1.44 [1.29, 1.59]
Hansen 2004 (women 20)	1.37	0.064	2.1%	1.37 [1.24, 1.50]
Hollman 2007 (women 20)	1.387	0.04	2.4%	1.39 [1.31, 1.47]
Laufer 2003 (men 20)	1.465	0.049	2.3%	1.47 [1.37, 1.56]
Laufer 2003 (women 20)	1.445	0.043	2.4%	1.45 [1.36, 1.53]
Lord 1996 (men 20)	1.38	0.035	2.5%	1.38 [1.31, 1.45]
Lord 1996 (women 30)	1.32	0.038	2.5%	1.32 [1.25, 1.39]
Mills 2001 (men 20)	1.41	0.04	2.4%	1.41 [1.33, 1.49]
Oberg 1993 (men 20)	1.23	0.028	2.6%	1.23 [1.18, 1.28]
Oberg 1993 (men 30)	1.32	0.039	2.5%	1.32 [1.24, 1.40]
Oberg 1993 (women 30)	1.24	0.044	2.4%	1.24 [1.15, 1.33]
Oberg 1993 (women 30)	1.28	0.049	2.3%	1.28 [1.18, 1.38]
Rogers 2005 (women 20)	1.35	0.05	2.3%	1.35 [1.25, 1.45]
Wilken 2012 (men 2030)	1.5	0.015	2.7%	1.50 [1.47, 1.53]
Wilken 2012 (women 2030)	1.5	0.02	2.7%	1.50 [1.46, 1.54]
Total (95% CI)			**100.0%**	**1.39 [1.36, 1.43]**

Heterogeneity: Tau² = 0.01; Chi² = 497.04, df = 40 (P < 0.00001); I² = 92%
Test for overall effect: Z = 74.98 (P < 0.00001)

MEN & WOMEN	VERY LOW	AT RISK	NORMAL
Reference data			
	0.8	1.1	1.4
Cut-off consensus statements			
EWGSOP (m/s)	0.8		
IWGS (m/s)	1.1		
FNIH (m/s)	0.8		

VERY LOW	< 0.8 m/s	➢ treatment
AT RISK	0.8 m/s < X < 1.1 m/s	➢ secundary prevention
NORMAL	> 1.1 m/s	➢ primary prevention

Legend: EWGSOP: European Working Group on Sarcopenia in Older People; IWGS: International Working Group on Sarcopenia; FNIH: Foundation for the National Institutes of Health Sarcopenia

🌐 RECOMMENDATION

- At this moment, best evidence is available for using **gait speed** to appraise physical performance in a clinical setting. Since for gait speed, robust normative values are available, we recommend gait speed to assess physical performance.
- Different protocols exist to asses gait speed and we recommend the **4m usual gait speed** protocol since this is considered most feasible in a clinical setting.
- We recommend categorizing subjects according to the **normative values for healthy young people as presented above.**

REFERENCES: Bohannon RW, Williams Andrews A. Normal walking speed: a descriptive meta-analysis. Physiotherapy 2011;97(3):182-9. [PubMed: 21820535], Salbach NM, O'Brien KK, Brooks D, Irvin E, Martino R, Takhar P, et al. Reference values for standardized tests of walking speed and distance: a systematic review. Gait & posture 2015;41(2):341-60. [PubMed: 25542397]