



ISPO Scientific Committee

Gait Outcomes (GO) Initiative

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Gait Outcomes (GO) Initiative

ISPO Stride Parameter Database: Unilateral Transtibial and Transfemoral Amputees

This database brings together stride parameter information from the literature on unilateral transtibial and transfemoral amputees walking. Researchers, clinicians, and students are free to use and update this Microsoft Excel-format to improve our understanding of amputee gait. The usage guidelines are:

- The GO information is available for use by downloading the Excel file or viewing the summary tables. The database file can be shared with others, but please maintain the ISPO GO Initiative title and header.
- If used in research or other documents, please reference this work by “ED Lemaire (2014) “International Society for Prosthetics and Orthotics Stride Parameter Database: Unilateral Transtibial and Transfemoral Amputees”. ISPO Scientific Committee. Brussels.”
- The prosthetic and orthotic community is encouraged to add to this database file and send additions to the [ISPO Scientific Committee](#) . Updates will be added to this web site for access globally. Relevant publications can also be sent to the Scientific Committee for inclusion in the database. Unpublished results from clinical facilities are also encouraged.
- Contributors to the database will be recognized in GO updates.

The ISPO Scientific Committee looks forward to receiving communications about the GO Initiative by email at ispo@ispoint.org and to see this information used to improve evidence-based practice for people with prosthetic or orthotic needs.

Database (Excel Format)

Download the [ISPO Stride Parameter Database: Unilateral Transtibial and Transfemoral Amputees](#)

Summary Tables

Table 1: Average and standard deviation for transtibial amputee stride parameters (prosthetic side).

| | Speed (m/s) | Cadence (steps/min) | Stride Length (m) | Step Length (m) | Stride time (s) | Stance time (s) | Swing Time (s) |
|-----------------------|-------------|---------------------|-------------------|-----------------|-----------------|-----------------|----------------|
| Overall | 1.11 (0.16) | 99.48 (11.70) | 1.22 (0.12) | 0.66 (0.07) | 1.22 (0.10) | 0.64 (0.06) | 0.42 (0.03) |
| Natural Speed | 1.10 (0.16) | 99.15 (11.82) | 1.20 (0.12) | 0.65 (0.07) | 1.22 (0.11) | 0.63 (0.06) | 0.43 (0.03) |
| Fast Speed | 1.41 (0.19) | 109.17 (9.26) | 1.49 (0.13) | 0.77 (0.06) | 1.11 (0.07) | 0.71 (0.05) | 0.35 (0.05) |
| Under 65 years | 1.14 (0.16) | 98.75 (11.29) | 1.21 (0.11) | 0.66 (0.07) | 1.22 (0.10) | 0.64 (0.06) | 0.42 (0.03) |

| | | | | | | | |
|----------------------|-------------|----------------|-------------|-------------|--|-------------|-------------|
| Over 65 years | 1.00 (0.18) | 102.45 (11.69) | 1.24 (0.14) | 0.76 (0.10) | | 0.66 (0.06) | 0.44 (0.02) |
|----------------------|-------------|----------------|-------------|-------------|--|-------------|-------------|

Table 2: Average and standard deviation for transtibial amputee stride parameters (prosthetic side).

| | Stance % | Swing % | Double Support (s) | Double Support (%) | Step Width (m) |
|-----------------------|-----------------|----------------|---------------------------|---------------------------|-----------------------|
| Overall | 54.97 (2.78) | 35.19 (2.88) | 0.22 (0.03) | 15.13 (2.51) | 3.18 (0.68) |
| Natural Speed | 57.76 (2.78) | 35.51 (2.47) | 0.23 (0.03) | 14.42 (2.52) | 3.92 (0.84) |
| Fast Speed | 36.73 (2.98) | 36.25 (4.67) | 0.17 (0.03) | 13.95 (2.26) | 0.25 (0.05) |
| Under 65 years | 54.45 (2.79) | 35.19 (2.88) | 0.22 (0.03) | 15.04 (2.47) | 0.16 (0.03) |
| Over 65 years | 56.68 (3.40) | 0.00 (0.00) | | 15.70 (2.80) | 15.30 (3.30) |

Table 3: Average and standard deviation for transfemoral amputee stride parameters (prosthetic side).

| | Speed (m/s) | Cadence (steps/min) | Stride Length (m) | Step Length (m) | Stride time (s) | Stance time (s) | Swing Time (s) |
|----------------------|--------------------|----------------------------|--------------------------|------------------------|------------------------|------------------------|-----------------------|
| Overall | 1.02 (0.13) | 82.14 (7.91) | 4.63 (0.13) | 0.72 (0.06) | 1.40 (0.12) | 0.78 (0.07) | 0.56 (0.04) |
| Natural Speed | 1.00 (0.13) | 79.53 (8.06) | 6.09 (0.14) | 0.71 (0.06) | 1.40 (0.13) | 0.80 (0.06) | 0.57 (0.04) |
| Fast Speed | 1.15 (0.14) | 94.11 (8.36) | 1.48 (0.12) | 0.78 (0.07) | 1.28 (0.11) | 0.64 (0.06) | 0.54 (0.04) |

Table 4: Average and standard deviation for transfemoral amputee stride parameters (prosthetic side).

| | Stance % | Swing % | Double Support (s) | Double Support (%) | Step Width (m) |
|----------------------|-----------------|----------------|---------------------------|---------------------------|-----------------------|
| Overall | 57.58 (1.96) | 41.46 (2.59) | 0.15 (0.04) | 10.16 (2.71) | 0.15 (0.05) |
| Natural Speed | 58.71 (2.05) | 40.68 (2.45) | 0.16 (0.04) | 11.17 (2.07) | 0.15 (0.04) |
| Fast Speed | 54.09 (1.76) | 45.58 (3.50) | 0.14 (0.04) | 8.65 (3.98) | 0.14 (0.04) |