

Supplementary data

Table S1. Overview of handwriting features involved in regression models estimating PD duration
(FI - feature importance)

FI	feature
conventional on-surface	
0.130	horizontal velocity (median) of repetitive word porovnat (on-surface)
0.870	vertical normalized jerk (mean) of repetitive word lektorka (on-surface)
0.870	vertical jerk (mean) of repetitive loops (on-surface)
0.870	vertical velocity (max) of repetitive word porovnat (on-surface)
0.044	vertical velocity (std) of sentence (on-surface)
0.044	vertical normalized jerk (std) of repetitive word lektorka (on-surface)
0.044	vertical normalized jerk (std) of letters le (on-surface)
0.044	vertical normalized jerk (median) of repetitive word lektorka (on-surface)
0.044	vertical velocity (mean) of word nepopadnout (on-surface)
0.044	vertical normalized jerk (mean) of sentence (on-surface)
0.044	vertical normalized jerk (mean) of letters le (on-surface)
0.044	vertical jerk (mean) of word porovnat (on-surface)
0.044	vertical velocity (max) of word les (on-surface)
0.044	vertical acceleration (max) of word les (on-surface)
0.044	vertical acceleration (max) of repetitive word porovnat (on-surface)
0.044	vertical acceleration (max) of Archimedean spiral (on-surface)
0.044	velocity (max) of word les (on-surface)
0.044	horizontal jerk (max) of repetitive letters l (on-surface)
conventional in-air	
0.120	jerk (std) of repetitive letters le (in-air)
0.120	velocity (median) of repetitive word lektorka (in-air)
0.120	horizontal jerk (max) of word lektorka (in-air)
0.120	horizontal velocity (std) of repetitive word les (in-air)
0.080	horizontal velocity (std) of word nepopadnout (in-air)
0.040	vertical acceleration (std) of repetitive word les (in-air)
0.040	horizontal jerk (std) of word porovnat (in-air)
0.040	vertical normalized jerk repetitive word lektorka (in-air)
0.040	jerk (median) of word nepopadnout (in-air)
0.040	horizontal normalized jerk (median) of repetitive letters le (in-air)
0.040	vertical velocity (mean) of repetitive letters l (in-air)
0.040	velocity (mean) of word porovnat (in-air)
0.040	vertical velocity (max) of sentence (in-air)
0.040	vertical acceleration (max) of repetitive letters le (in-air)
0.040	horizontal velocity (max) of repetitive word porovnat (in-air)
0.040	acceleration (max) of repetitive letters l (in-air)
conventional together	
0.136	horizontal jerk (mean) of repetitive word les (in-air)
0.091	vertical normalized jerk (median) of repetitive word lektorka (in-air)
0.091	vertical normalized jerk (mean) of repetitive word lektorka (on-surface)
0.091	jerk (max) of repetitive word lektorka (on-surface)

0.091	horizontal velocity (max) of repetitive word porovnat (in-air)
0.046	velocity (std) of word nepopadnout (in-air)
0.046	jerk (median) of repetitive word porovnat (on-surface)
0.046	horizontal jerk (median) of word lektorka (in-air)
0.046	vertical velocity (mean) of word nepopadnout (on-surface)
0.046	vertical velocity (mean) of sentence (on-surface)
0.046	horizontal acceleration (mean) of sentence (on-surface)
0.046	vertical velocity (max) of word lektorka (on-surface)
0.046	vertical velocity (max) of sentence (in-air)
0.046	vertical jerk (max) of repetitive word porovnat (on-surface)
0.046	vertical acceleration (max) of word les (on-surface)
0.046	horizontal jerk (max) of repetitive letters l (on-surface)
FD on-surface	
0.143	vertical velocity (std) of $\alpha=0.1$ letters le (on-surface)
0.143	jerk (median) of $\alpha=0.2$ word nepopadnout (on-surface)
0.143	vertical velocity (mean) of $\alpha=0.1$ repetitive word porovnat (on-surface)
0.093	horizontal velocity (std) of $\alpha=0.1$ letters le (on-surface)
0.048	vertical velocity (std) of $\alpha=0.2$ letters le (on-surface)
0.048	vertical velocity (std) of $\alpha=0.1$ word nepopadnout (on-surface)
0.048	velocity (std) of $\alpha=0.3$ Archimedean spiral (on-surface)
0.048	vertical acceleration (median) of $\alpha=0.8$ word nepopadnout (on-surface)
0.048	jerk (median) of $\alpha=0.2$ word lektorka (on-surface)
0.048	horizontal acceleration (median) of $\alpha=0.1$ sentence (on-surface)
0.048	acceleration (median) of $\alpha=0.3$ sentence (on-surface)
0.048	vertical velocity (mean) of $\alpha=0.1$ word porovnat (on-surface)
0.048	vertical acceleration (mean) of $\alpha=0.7$ repetitive word lektorka (on-surface)
0.048	acceleration (max) of $\alpha=0.5$ Archimedean spiral (on-surface)
FD in-air	
0.120	vertical velocity (std) of $\alpha=0.1$ sentence (in-air)
0.080	horizontal velocity (std) of $\alpha=0.3$ repetitive letters l (in-air)
0.080	jerk (median) of $\alpha=0.5$ sentence (in-air)
0.080	vertical velocity (mean) of $\alpha=0.2$ word lektorka (in-air)
0.080	acceleration (max) of $\alpha=0.8$ repetitive word les (in-air)
0.040	vertical velocity (std) of $\alpha=0.2$ sentence (in-air)
0.040	vertical velocity (median) of $\alpha=0.2$ repetitive word porovnat (in-air)
0.040	velocity (median) of $\alpha=0.1$ repetitive letters l (in-air)
0.040	jerk (median) of $\alpha=0.9$ word nepopadnout (in-air)
0.040	jerk (median) of $\alpha=0.8$ word lektorka (in-air)
0.040	jerk (median) of $\alpha=0.3$ word nepopadnout (in-air)
0.040	horizontal velocity (median) of $\alpha=0.7$ repetitive word les (in-air)
0.040	horizontal velocity (median) of $\alpha=0.5$ repetitive word lektorka (in-air)
0.040	horizontal velocity (median) of $\alpha=0.2$ repetitive word les (in-air)
0.040	vertical acceleration (mean) of $\alpha=0.8$ sentence (in-air)
0.040	vertical acceleration (mean) of $\alpha=0.1$ sentence (in-air)
0.040	horizontal acceleration (mean) of $\alpha=0.8$ sentence (in-air)
0.040	vertical jerk (max) of $\alpha=0.2$ sentence (in-air)
0.040	jerk (max) of $\alpha=0.1$ sentence (in-air)

FD together	
0.125	vertical velocity (std) of $\alpha=0.1$ sentence (in-air)
0.083	jerk (median) of $\alpha=0.2$ word nepopadnout (on-surface)
0.042	vertical velocity (std) of $\alpha=0.2$ letters le (on-surface)
0.042	vertical velocity (std) of $\alpha=0.1$ letters le (on-surface)
0.042	velocity (std) of $\alpha=0.3$ Archimedean spiral (on-surface)
0.042	velocity (std) of $\alpha=0.1$ Archimedean spiral (on-surface)
0.042	jerk (std) of $\alpha=0.4$ Archimedean spiral (on-surface)
0.042	horizontal velocity (std) of $\alpha=0.1$ repetitive letters le (on-surface)
0.042	horizontal velocity (std) of $\alpha=0.1$ letters le (on-surface)
0.042	jerk (median) of $\alpha=0.4$ word les (on-surface)
0.042	jerk (median) of $\alpha=0.3$ word nepopadnout (in-air)
0.042	jerk (median) of $\alpha=0.1$ repetitive word lektorka (in-air)
0.042	horizontal velocity (median) of $\alpha=0.9$ word lektorka (in-air)
0.042	horizontal acceleration (median) of $\alpha=0.1$ sentence (on-surface)
0.042	acceleration (median) of $\alpha=0.3$ sentence (on-surface)
0.042	acceleration (median) of $\alpha=0.1$ sentence (in-air)
0.042	vertical velocity (mean) of $\alpha=0.1$ repetitive word porovnat (on-surface)
0.042	vertical acceleration (mean) of $\alpha=0.9$ sentence (in-air)
0.042	vertical acceleration (mean) of $\alpha=0.3$ word nepopadnout (on-surface)
0.042	horizontal jerk (mean) of $\alpha=0.9$ repetitive letters l (on-surface)
0.042	velocity (max) of $\alpha=0.1$ repetitive word les (in-air)
all on-surface	
0.143	vertical velocity (std) of $\alpha=0.1$ letters le (on-surface)
0.093	jerk (median) of $\alpha=0.2$ word nepopadnout (on-surface)
0.093	vertical velocity (mean) of $\alpha=0.1$ repetitive word porovnat (on-surface)
0.093	horizontal velocity (max) of repetitive letters l (on-surface)
0.048	vertical velocity (std) of $\alpha=0.2$ letters le (on-surface)
0.048	velocity (std) of $\alpha=0.3$ Archimedean spiral (on-surface)
0.048	horizontal velocity (std) of $\alpha=0.1$ letters le (on-surface)
0.048	vertical velocity (median) of $\alpha=0.3$ word porovnat (on-surface)
0.048	jerk (median) of $\alpha=0.2$ word lektorka (on-surface)
0.048	horizontal velocity (median) of word lektorka (on-surface)
0.048	acceleration (median) of $\alpha=0.3$ sentence (on-surface)
0.048	vertical velocity (mean) of $\alpha=0.1$ word porovnat (on-surface)
0.048	vertical velocity (mean) of $\alpha=0.1$ repetitive loops (on-surface)
0.048	vertical acceleration (mean) of $\alpha=0.7$ repetitive word lektorka (on-surface)
0.048	jerk (mean) of sentence (on-surface)
0.048	horizontal jerk (max) of repetitive letters l (on-surface)
all in-air	
0.167	vertical velocity (std) of $\alpha=0.1$ sentence (in-air)
0.125	horizontal velocity (std) of $\alpha=0.3$ repetitive letters l (in-air)
0.083	vertical velocity (mean) of $\alpha=0.2$ word lektorka (in-air)
0.083	vertical normalized jerk (mean) of repetitive word lektorka (in-air)
0.042	vertical velocity (std) of $\alpha=0.2$ sentence (in-air)
0.042	horizontal velocity (std) of $\alpha=0.2$ sentence (in-air)
0.042	velocity (median) of $\alpha=0.1$ repetitive letters le (in-air)

0.042	jerk (median) of $\alpha=0.4$ sentence (in-air)
0.042	jerk (median) of $\alpha=0.3$ word nepopadnout (in-air)
0.042	horizontal velocity (median) of $\alpha=0.9$ word lektorka (in-air)
0.042	horizontal velocity (median) of $\alpha=0.7$ repetitive word les (in-air)
0.042	vertical jerk (mean) of $\alpha=0.1$ repetitive letters le (in-air)
0.042	horizontal jerk (mean) of word lektorka (in-air)
0.042	horizontal jerk (mean) of repetitive word les (in-air)
0.042	horizontal jerk (mean) of $\alpha=0.1$ repetitive letters le (in-air)
0.042	vertical acceleration (max) of repetitive letters l (in-air)
0.042	velocity (max) of $\alpha=0.1$ repetitive word les (in-air)
all together	
0.095	vertical velocity (std) of $\alpha=0.2$ letters le (on-surface)
0.095	vertical velocity (std) of $\alpha=0.1$ sentence (in-air)
0.095	vertical velocity (std) of $\alpha=0.1$ letters le (on-surface)
0.095	vertical velocity (mean) of $\alpha=0.1$ repetitive word porovnat (on-surface)
0.048	velocity (std) of $\alpha=0.3$ Archimedean spiral (on-surface)
0.048	jerk (median) of $\alpha=0.5$ repetitive word porovnat (on-surface)
0.048	jerk (median) of $\alpha=0.2$ word nepopadnout (on-surface)
0.048	horizontal velocity (median) of word lektorka (on-surface)
0.048	horizontal velocity (median) of $\alpha=0.9$ word lektorka (in-air)
0.048	vertical velocity (mean) of Archimedean spiral (on-surface)
0.048	horizontal jerk (mean) of repetitive word les (in-air)
0.048	horizontal jerk (mean) of $\alpha=0.5$ sentence (on-surface)
0.048	vertical velocity (max) of $\alpha=0.1$ repetitive word porovnat (in-air)
0.048	vertical normalized jerk (max) of letters le (on-surface)
0.048	velocity (max) of $\alpha=0.1$ repetitive word les (in-air)
0.048	jerk (max) of repetitive word lektorka (on-surface)
0.048	horizontal velocity (max) of repetitive word porovnat (in-air)