

# Erratum to: Validation of an Assistance System for Motion Analysis

Erratum zu: Validierung eines Assistenzsystems zur Bewegungskontrolle

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Erratum to: Lösch C, Nitzsche N, Maiwald C, Richter J, Lehmann L, Wiede C, Weigert M, Schulz H. Validation of an assistance system for motion analysis. Dtsch Z Sportmed. 2019; 70: 75-82.

## Erratum

During a follow-up of the research project on which the above mentioned publication is based, the authors became aware of the incorrect numerical values for the sensitivity of the error images of externally rotated hips (HO) and tilting upper body (UB). Multiple calculations showed that the sensitivity of the two error images mentioned above was wrongly calculated with the equation  $P=a/(a+c)$  printed so far, the sensitivity of the other two error images was correctly calculated with the equation  $P=c/(a+c)$ .

The corrected calculation gives higher values for both UB and HO (UB=0.546 instead of 0.454; HO=0.871 instead of 0.129), which indicates better functionality of the assistance system. These values therefore also fit the ROC curves.

In the previous version of the publication, the discussion was based on the low numerical value determined for HO (0,129). Based on the corrected numerical values, the correction of the following statements of the discussion is necessary.

1. Variations were found for the HO error pattern with a low SENS of 12.9%, an average SPEC of 77.3%, and the highest FPV of 22.7% (Table 4).  
→ erased
2. A low SENS means a susceptibility to errors.  
→ replaced by  
A middle SENS over all error patterns means a susceptibility to errors.

3. That means, if the system is not so sensitive, fewer errors for HO will be detected.  
→ erased
4. However, with low SENS the PPV increases and it describes that it can be assumed that the detected HO actually occurred.  
→ replaced by  
However, with middle SENS the PPV increases and it describes that it can be assumed that the detected error patterns actually occurred.
5. A low SENS, such as the HO error pattern (12.9%) and a high PPV (74.3%), indicate that this error was not detected as well by the system.  
→ replaced by  
A high SENS, such as the HO error pattern (87.1%) and a high PPV (74.3%), indicate that this error was detected as well by the system.
6. However, if this was the case, the error was actually present.  
→ erased

Table 4 shows the corrected numerical values. The corrected equations on which the calculation is based are listed in Table 5.

Table 4

Diagnostic parameter's sensitivity (SENS), specificity (SPEC), false-positive value (FPV), positive predictive value (PPV) and negative predictive value (NPV) for validation of the assistance system; UB: upper body; WP: wrong plane; BK: bent knee; HO: hip rotated outside.

	UB	WP	BK	HO
SENS	0.546	0.516	0.666	0.871
SPEZ	0.858	0.869	0.844	0.773
FPV	0.141	0.130	0.155	0.227
PPV	0.684	0.458	0.462	0.743
NPV	0.771	0.894	0.927	0.888

Table 5

Equations.

(1)	$P = c/(a+c)$
(2)	$P = b/(b+d)$
(3)	$P = d/(b+d)$
(4)	$P = c/(c+d)$
(5)	$P = b/(a+b)$

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## ERRATUM

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