Correction

Correction to: Validation and Comparison of Instrumented Mouthguards for Measuring Head Kinematics and Assessing Brain Deformation in Football Impacts

YUZHE LIU ¹, AUGUST G. DOMEL,¹ SEYED ABDOLMAJID YOUSEFSANI,¹
JOVANA KONDIC,^{1,2} GERALD GRANT,^{3,4} MICHAEL ZEINEH,⁵
and DAVID B. CAMARILLO^{1,3,6}

¹Department of Bioengineering, Stanford University, Stanford, CA 94305, USA; ²Department of Electrical Engineering, Princeton University, Princeton, NJ 08540, USA; ³Department of Neurosurgery, Stanford University, Stanford, CA 94305, USA; ⁴Department of Neurology, Stanford University, Stanford, CA 94305, USA; ⁵Department of Radiology, Stanford University, Stanford, CA 94305, USA; and ⁶Department of Mechanical Engineering, Stanford University, Stanford, CA 94305, USA

(Published online 2 February 2021)

CORRECTION TO:
ANNALS OF BIOMEDICAL ENGINEERING
VOLUME 48, PAGES 2580–2598 (2020)
<https://doi.org/10.1007/s10439-020-0269-3>

This erratum is to correct the description about SWA mouthguard accuracy in the 6th sentence of the 11th paragraph (starting with “In summary, “) in the Discussion section. Since no criterion was set, the sentence “The SWA mouthguard was found to fail in providing reliable measurements of the linear acceleration at CoG, ” should be changed to “The SWA

mouthguard was found to provide linear acceleration at CoG with relatively high error,”. Then, the following sentence about the information of SWA mouthguard should be added after the 1st sentence of the 10th paragraph in the Discussion Section. “The SWA mouthguard does not have a filter, unlike the MiG and PRE mouthguards which do (Table 2)”. Additionally, the row about the filter information should be added at the bottom of Table 2:

This erratum is also to correct the corresponding author as Yuzhe Liu.

Address correspondence to Yuzhe Liu, Department of Bioengineering, Stanford University, Stanford, CA 94305, USA. Electronic mail: yuzheliu@stanford.edu

The original article can be found online at <https://doi.org/10.1007/s10439-020-0269-3>.

TABLE 2. Parameters and specifications corresponding to the MiG, PRE, and SWA mouthguards, as well as the reference ATD.

	Stanford mouthguards (MiG-C and MiG-B)	Prevent mouthguards (PRE-C and PRE-B)	Sports & wellbeing analytics mouthguard (SWA-C)	ATD (Refer- ence)
Sampling rate (Ac- celerometer)	1000 Hz	3200 Hz	1000 Hz	100,000 Hz
Sampling rate (Gyro- scope)	8000 Hz	3200 Hz	952 Hz	100,000 Hz
Measurement range (Ac- celerometer)	± 400 g	± 200 g	± 200 g	± 500 g
Measurement range (Gy- roscope)	± 70 rad/sec	± 35 rad/s	± 35 rad/s	± 140 rad/s
Output time windows	[− 49,150] ms	[0, 50] ms	[1, 103] ms	[− 200, 800] ms
Output coordinate axes direction	X-front, Y-left, z-top	X-front, Y-right, z-bottom	Not parallel to standard coordi- nate	X-front, Y-right, z-bottom
Output coordinate origin	Sensor	Center of Gravity (CoG)	Sensor	Center of Grav- ity (CoG)
Time windows after align- ment processing	[− 48, 151] ms	[− 10,40] ms	[− 1,101] ms	[− 200, 800] ms
Cut-off frequency of the filter	160 Hz	200 Hz	No filter	300 Hz

In time windows after the alignment processing, $t = 0$ ms corresponds to the trigger-point of the ATD (absolute value of linear acceleration at CoG in any components reaches 10 g), see “Materials and Methods” Section for information about the time alignment.

Publisher’s Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.