

Supplemental Material

Table S1: Example Database Search Strategies

1	Osteoarthritis, Knee/
2	Osteoarthritis.ti,ab
3	Knee/
4	Knee*.ti,ab
5	Wearable Electronic Devices/
6	Wearable*.ti,ab
7	Monitoring, Ambulatory/
8	(IMU* OR inertial measurement unit*).mp
9	(fitbit* OR jawbone* OR iwatch* OR activity tracker* OR step counter* OR axivity* OR tracpatch* OR geneactive* OR actipal* OR pedometer* OR actigraph*).mp
10	(accelerometer* OR gyroscope*).mp
11	(arthroplast* OR replace*).mp
12	Arthroplasty, Replacement, Knee/
13	1 OR 2
14	3 OR 4
15	13 OR 14
16	5 OR 6 OR 7 OR 8 OR 9 OR 10
17	11 OR 12
18	15 AND 16 AND 17

Table S2: Sensors used in functional assessment studies

Study	Sensor Model and Manufacturer
Ali et al. 2012 [20]	e-AR Sensor, Sensixa Ltd
Bolink et al. 2015 [27]	Inertia-Link, Microstrain
Chapman et al. 2019 [26]	APDM, Inc.
Chiang et al. 2017 [28]	APDM Movement Monitoring System
Christiansen et al. 2015 [21]	Delsys, Inc.
Hiyama et al. 2015 [29]	MVP-RF8-HC, Microstone Company
Kluge et al. 2018 [30]	Shimmer 3, Shimmer
Kwasnicki et al. 2015 [22]	e-AR Sensor, Sensixa Ltd
Rahman et al. 2015 [23]	GaitSmart, ETBH Ltd
Ramkumar et al. 2019 [31]	TKR App, Focus Ventures on Apple iOS
Senden et al. 2011 [8]	Dynaport MiniMod, McRoberts
Storey et al. 2013 [24]	GT3X+, ActiGraph and Forerunner 305, Garmin
van Hemert et al. 2009a [33]	Dynaport MiniMod, McRoberts
van Hemert et al. 2009b [34]	Dynaport MiniMod, McRoberts
Youn et al. 2018 [32]	Noraxon USA
Zhang et al. 2016 [25]	IDEEA3, MiniSun LLC

Table S3: Sensors used in physical activity studies

Study	Sensor Model and Manufacturer
Agarwal et al. 2017 [46]	GT1M, ActiGraph LLC
Bolszak et al. 2014 [47]	GT3X+, ActiGraph LLC
Brandes et al. 2011 [59]	Dynaport ADL, McRoberts; SAM, OrthoCare Innovations
Christiansen 2019 [48]	GT3X, ActiGraph LLC
Cooper et al. 2017 [40]	PAL Technologies Ltd.
Daugaard et al. 2018 [36]	X16-mini, Gcdataconcepts and AX3, Axivity Ltd.
De Groot et al. 2008 [42]	The Activity Monitor
Fenten et al. 2018 [49]	<i>Not Reported</i>
Frimpong et al. 2018 [50]	GTX3+, ActiGraph LLC
Harding et al. 2014 [43]	GT1M, ActiGraph LLC
Hayashi et al. 2018 [44]	Lifecorder GS, Suzuken
Hayes et al. 2011 [60]	IDEEA, MiniSun LLC
Kahn et al. 2015 [37]	GT1M, ActiGraph LLC
Kahn et al. 2016 [38]	GT1M, ActiGraph LLC
Losina et al. 2018 [51]	Zip, Fitbit Inc.
Luna et al. 2019 [52]	Actiwatch Score, Philips Respironics
Lützner et al. 2014 [41]	activPAL, PAL Technologies
Lützner et al. 2016 [53]	activPAL, PAL Technologies
Pellegrini et al. 2018 [54]	GT3X, ActiGraph LLC
Schotanus et al. 2017 [55]	GC Dataconcepts LLC
Taniguchi et al. 2016 [56]	ES-500, YAMASA
Tsuji et al. 2010 [57]	Activtracer AC-210, GMS
Twiggs et al. 2018 [58]	Flex, Fitbit
Vissers et al. 2010 [61]	Rotterdam Activity Monitor, Temec Instruments
Vissers et al. 2013 [45]	Rotterdam Activity Monitor, Temec Instruments
Webber et al. 2017 [39]	GT3X+, ActiGraph LLC

S4: Sensors used in instability studies

Study	Sensor Model and Manufacturer
Khan et al. 2013 [62]	GLI Interactive LLC
Roberts et al. 2013 [63]	MotionNode, Motion Workshop
Soeno et al. 2018 [64]	WAA-10, ATR-Promotions Inc.