

## Supplementary Material

*Table S1 – Modified AXIS Critical Appraisal Tool*

	Question	Yes = 1 or 2	No = 0	Not Applicable (Comment)
<b>Introduction</b>				
1	Were the aims/objectives of the study clear?			
<b>Methods</b>				
2	Was the study design appropriate for the stated aim(s)?			
3	Was the sample size justified?			
4	Was the target reference population clearly defined? (Is it clear who the research was about?)			
5	Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?			
6	Was the selection process likely to select subjects or participants that were representative of the target/reference population under investigation?			
7	Were measures undertaken to address and categorise non-responders?			
8	Were the risk factor and outcome variables measured appropriate for the aims of the study?			
9	Were the risk factor and outcome variables measured correctly using instruments/measurements that has been trialed, piloted or published previously?			
10	Is it clear what was used to determine statistical significance and/or precision estimate? (e.g. p-values, confidence intervals)			
11	Were the methods (including statistical methods) sufficiently described to enable them to be repeated?			
*12	Do the authors define their interpretation of injury? (e.g. chronic, gradual-onset or non-musculoskeletal conditions)			
13	Was an appropriate criteria for injury severity used?			
14	Was injury data collected objectively? (Score = 2)			
*	OR			
	Was injury data collected via self-reporting? (Score = 1)			
*15	If appropriate, was the mechanism of the injury recorded?			
<b>Results</b>				
16	Were the basic data adequately described?			
*17	Are there no concerns about non-response bias?			
18	If appropriate, was information about non-responders described?			
19	Were the results internally consistent?			
20	Were the results presented for all the analyses described in the methods?			
<b>Discussion</b>				
21	Were the authors' discussions and conclusions justified by the results?			
22	Were the limitations of the study discussed?			
<b>Other</b>				
*23	Was there an absence of any funding sources or conflicts of interest that may affect the authors' interpretation of the results?			
24	Was ethical approval or consent of participants obtained?			
<b>TOTAL SCORE =</b>				

Key: \*Modified questions as per the Method section.

*Table S2 – Categorisation for Body Location of Musculoskeletal Injuries*

<b>Category of Body Location</b>	<b>Inclusive of</b>
Head/Face/Neck	Head/Face[10,24]; Neck[10,11,24]; Head/Neck[35]
Shoulder	Shoulder[10,11,24,29,35]
Upper Limb	Arm[10]; Forearm[35]; Elbow[11,24,29]; Wrist/Hand[24]
Torso	Ribs[11]; Ribs/Sternum[10]; Chest/Back[35]
Spine/Back	Back[11,29]; Thoracic[10,24]; Lower Back[10,23,24,35]
Hip/Groin	Hip/Groin[10,24]
Knee	Knee[10,24]
Lower Limb	Lower Limb[35]; Shin/Calf[24]; Leg/Ankle[10]; Ankle[24]
Other	Other[11,29]

*Table S3 – Categorisation for Mechanism of Musculoskeletal Injuries*

<b>Category of Mechanism</b>	<b>Inclusive of</b>
Paddling	Prolonged Paddling[24]; High Intensity Paddling[24]; Keeping Head Up While Paddling[24]; Overuse Paddling[4,5]; Paddling[10]
Manoeuvre	Turning Manoeuvres[24]; Landing Aerials[24]; Stress from Manoeuvre[4,5]
Overuse of Joint	Overuse of Joint[11]
Riding the Wave	Stand-Up Phase[24]; Pushing Down to Stand Up[24]; Tube Riding[24]; Trauma from Wave[24]; Riding Wave[10]
Prolonged Environmental Exposure	Prolonged Environmental Exposure[24]
Prolonged Positioning on Board	Prolonged Lying on Surfboard[24]; Prolonged Sitting on Surfboard[24]
Duck Diving	Duck Diving[24]
Certain Stances	Certain Stances[24]
Other	Miscellaneous[10]; Other[11]; Rib Inflammation[11]
Unknown	Unknown[10,24]

*Table S4 – Injury Epidemiology Specific to Injury Type, Location, Mechanism, & Severity*

<b>Author (year)</b>	<b>Type of Injury</b>	<b>Body Region</b>	<b>Mechanism</b>	<b>Severity</b>
Alexander et al.	Exostosis	Ear	-	Grade 0 (100% patency) = 95 (46%) Grade 1 (66-99% patency) = 47 (23%) Grade 2 (33-65% patency) = 34 (16%) Grade 3 (<33% patency) = 31 (15%)
Altuna et al.	Exostosis	Ear	-	First group (<25%) = 16 surfers Second group (25-50%) = 19 surfers Third group (50-75%) = 8 surfers Fourth group (75-100%) = 3 surfers
Attlmayr & Smith	Exostosis	Ear	-	No Obstruction = 76 (36.19%) Mild (<30% obstruction) = 70 (33.33%) Moderate (30-60% obstruction) = 38 (18.10%) Severe (>60% obstruction) = 26 (12.38%)
Bazanella et al.	Chronic Low Back Pain	Lower Back	-	-
Deleyiannis et al.	Exostosis	Ear	-	Median scores (of both ears) <5yrs group = 7.5 obstruction 6-15yrs group = 63.0 obstruction >15yrs group = 93.0 obstruction
Furness et al.	Chronic Injuries of; Joint origin (43.5%) Muscular origin (23.6%) Nerve origin (4.6%) Skin (0.5%) Bone origin (3.9%) Unspecified (16.2%) Non-musculoskeletal origin (7.7%) - auditory exostosis and otitis externa, and eye injuries including pterygium and abscess	Head/Face = 103 Neck = 121 Shoulder = 254 Elbow = 39 Wrist/Hand = 22 Thoracic = 55 Lower Back = 314 Hip/Groin = 70 Knee = 160 Shin/Calf = 10 Ankle = 66	Prolonged paddling = 260 (21.1%) * Turning manoeuvres = 182 (14.8%) ** Unknown = 142 (11.5%) High-intensity paddling = 110 (8.9%) * Stand-up phase = 76 (6.2%) ** Pushing down to stand up = 73 (5.9%) ** Keeping head up while paddling = 70 (5.7%) * Prolonged environmental exposure = 68 (5.6%) Prolonged lying on surfboard = 68 (5.6%) Duck diving = 59 (4.8%) Landing aerials = 31 (2.5%) ** Prolonged sitting on board = 29 (2.4%) Tube riding = 24 (1.9%) ** Certain stances = 21 (1.7%) ** Trauma from wave = 18 (1.5%) **	-
Inada et al.	Chronic injuries or conditions of joint origin (100%)	Lower Back (31%) Shoulder (27%) Lower Limbs (16%)	-	-

			Head & Neck (15%) Chest & Back (6%) Forearm (5%)	
Kroon et al.	Exostosis	Ear	-	Normal (100% patency) = 125 (62%) Mild (99-66% patency) = 53 (26%) Moderate severe (<66% patency) = 24 (12%)
Lennon et al.	Exostosis	Ear	-	-
Lin et al.	Pterygium	Eye	-	<u>Grade T1 (64.7%)</u> _Occasional = 4 _Recreational = 2 _Enthusiast = 5 <u>Grade T2 (17.6%)</u> _Occasional = 0 _Recreational = 0 _Enthusiast = 3 <u>Grade T3 (17.6%)</u> _Occasional = 1 _Recreational = 1 _Enthusiast = 1
Lowdon et al.	Sprain, Strain	-	Overuse paddling = 26 (22%) Stress from manoeuvre = 46 (39%)	-
Lowdon et al.	Sprain &/or Strain	-	Overuse paddling = 20 (29%) Stress from manoeuvre = 29 (42%)	-
Nakanishi et al.	Exostosis	Ear	-	Grade 0 (no obstruction) = 150 (40.3%) Grade 1 (<33% obstructed) = 118 (31.6%) Grade 2 (33-66% obstruction) = 71 (19%) Grade 3 (>66% obstruction) = 34 (9.1%)
Nathanson et al.	Overuse Syndromes (62%) Environmental Exposure (18%) Infection (15%) Other (5%)	Shoulder (86) Back (76) Neck (43) Knee (43) Elbow (24) Rib (14) Other MSK (10) Exostosis of ear (67) Pterygium (19) Otitis (33) Cellulitis (29) Sinusitis (10)	Overuse shoulder = 18% Overuse back = 16% Overuse neck = 9% Overuse knee = 9% Overuse elbow = 5%	-

		Other (23)		
Remnant et al.	Gradual-onset surfing-related injuries in the preceding 12 months	Shoulder (146) Lower back (115) Neck (104) Knee (36) Head and Face (35) Upper Back (34) Arm (24) Ribs and Sternum (21) Hip and Groin (21) Leg and Ankle (13)	Prolonged paddling = 222 (28%) * Stand up phase = 84 (10%) ** Head up whilst paddling = 70 (9%) * High intensity paddling = 67 (8%) * Performing manoeuvre = 65 (8%) ** Prolonged lying on surfboard = 59 (7%) Duck diving = 37 (5%) Environmental exposure = 24 (3%) Prolonged sitting = 19 (2%) Moving neck during manoeuvre = 16 (2%) ** Landing aerials = 13 (2%) ** Wipe outs = 12 (2%) ** Tube riding = 8 (1%) ** Unknown or other = 105 (13%)	-
Simas et al.	Exostosis	Ear	-	Grade 0 (0% obstructed) = 9 (41.3%) Grade 1 (1-33% obstructed) = 7 (30.4%) Grade 2 (34-66% obstructed) = 3 (10.9%) Grade 3 (67-100% obstructed) = 4 (17.4%)
Simas et al.	Exostosis	Ear	-	Bilateral = 293 (21.3%) Unilateral = 104 (7.6%)
Taylor et al.	Chronic health problems (Exostosis, Pterygium, Sinusitis & MSK injuries)	Ear (67) Eye (7) Neck & Back (29) Shoulder (15) Knee (12) Elbow (1) Muscle/joint pain (10) Stiffness (4) Sinusitis (1)	-	-
Umeda et al.	Exostosis	Ear	-	Severe stenosis (0-5) unilaterally = 12 Severe stenosis (0-5) Bilaterally = 12 Normal to slight stenosis (6-10) = 37
Wong et al.	Exostosis	Ear	-	Normal (100% Patency) = 159 (26.5%) Mild (99-66% Patency) = 239 (39.8%) Moderate (65-33% Patency) = 104 (17.3%) Severe (< 33% patency) = 98 (16.3%)

Key: \*Paddling, \*\* Riding wave