**Appendix 1.**

***Database: Ovid MEDLINE (1946 to June 2019)***

Search Strategy:

1 Obesity/ or obesity, abdominal/ (172169)

2 Adipose Tissue/ (75304)

3 Body Weight/ (184206)

4 obes\*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (327531)

5 high fat mass.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (98)

6 increased fat mass.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (543)

7 (high adj3 (bmi or body mass index)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (7077)

8 (increased adj3 (bmi or body mass index)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (7052)

9 adipos\*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (145114)

10 (increased adj3 body weight).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (6870)

11 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 (582990)

12 Sarcopenia/ (3242)

13 Muscle Weakness/ (7734)

14 Muscular Atrophy/ (10425)

15 Muscle Strength/ (17544)

16 Hand Strength/ (13402)

17 sarcopen\*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (7357)

18 (musc\* adj2 (strength or weak\*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (53934)

19 (hand grip or hand grasp or hand strength).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (15269)

20 (musc\* adj3 atroph\*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (24777)

21 (low adj3 musc\* strength).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (339)

22 low muscle mass.mp. (570)

23 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 (93001)

24 Depression/ (109332)

25 depress\*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (511684)

26 exp Depressive Disorder/ (103786)

27 low mood.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (681)

28 dysthymi\*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (3514)

29 24 or 25 or 26 or 27 or 28 (512814)

30 11 and 23 and 29 (181)

31 exp animals/ not humans.sh. (4586077)

32 30 not 31 (147)

***Database: Embase (1980 to June 2019)***

Search Strategy:

1 sarcopenic obesity/ (601)

2 obesity/ (381647)

3 fat mass/ (13436)

4 obes\*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (519003)

5 high fat mass.mp. (140)

6 increased fat mass.mp. (813)

7 (high adj3 (bmi or body mass index)).mp. (11623)

8 (increased adj3 (bmi or body mass index)).mp. (11638)

9 adipos\*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (158110)

10 (increased adj3 body weight).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (9116)

11 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 (626645)

12 sarcopenia/ (7769)

13 muscle atrophy/ (28783)

14 muscle strength/ (56818)

15 \*muscle mass/ (3533)

16 sarcopen\*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (12267)

17 (musc\* adj2 (strength or weak\*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (112004)

18 (musc\* adj3 atroph\*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (43575)

19 (hand grip or hand grasp or hand strength).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (14290)

20 low muscle mass.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (995)

21 (low adj3 musc\* strength).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (515)

22 exp hand strength/ (23101)

23 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 (178749)

24 1 or (11 and 23) (10080)

25 exp depression/ (427984)

26 depressi\*.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (630181)

27 dysthymi\*.mp. (8931)

28 mood disorder/ (40434)

29 low mood.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] (1176)

30 25 or 26 or 27 or 28 or 29 (679782)

31 24 and 30 (582)

32 (exp animal/ or nonhuman/) not exp human/ (5713581)

33 31 not 32 (570)

34 limit 33 to conference abstract (107)

***Database: PhychINFO (1806 to June 2019)***

Search Strategy:

1 exp OBESITY/ (23058)

2 exp Body Weight/ (51011)

3 exp Body Fat/ (1735)

4 obes\*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh] (41976)

5 high fat mass.mp. (4)

6 increased fat mass.mp. (28)

7 (high adj3 (bmi or body mass index)).mp. (765)

8 (increased adj3 (bmi or body mass index)).mp. (810)

9 adipos\*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh] (4525)

10 (increased adj3 body weight).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh] (570)

11 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 (68253)

12 sarcopen\*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh] (290)

13 exp Muscular Atrophy/ (648)

14 physical strength/ (1658)

15 (musc\* adj3 atroph\*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh] (1493)

16 (musc\* adj2 (strength or weak\*)).mp. (3545)

17 (hand grip or hand grasp or hand strength).mp. (3016)

18 (low adj3 musc\* strength).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh] (25)

19 or/12-18 (8855)

20 exp "DEPRESSION (EMOTION)"/ (24933)

21 exp Major Depression/ (122925)

22 depress\*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh] (348272)

23 dysthymi\*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh] (4236)

24 low mood.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures, mesh] (634)

25 or/20-24 (348993)

26 11 and 19 and 25 (42)

***Database: CINAHL (1806 to June 2019)***

Search Strategy:

S1 (MH "Obesity+")

S2 (MH "Adipose Tissue+")

S3 (MH "Body Weight")

S4 obes\*

S5 "high fat mass"

S6 "increased fat mass"

S7 (high N3 (bmi or body mass index))

S8 (increased N3 (bmi or body mass index))

S9 adipos\*

S10 (increased N3 body weight)

S11 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10

S12 (MH "Muscular Atrophy+")

S13 (MH "Muscle Weakness")

S14 (MH "Muscle Strength+")

S15 sarcopen\*

S16 (musc\* N2 (strength or weak\*))

S17 ("hand grip" or "hand grasp" or "hand strength")

S18 (musc\* N3 atroph\*)

S19 (low N3 musc\* strength)

S20 "low muscle mass"

S21 S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20

S22 (MH "Depression+")

S23 depress\*

S24 "low mood"

S25 dysthymi\*

S26 S22 OR S23 OR S24 OR S25

S27 S11 AND S21 AND S26 (104)