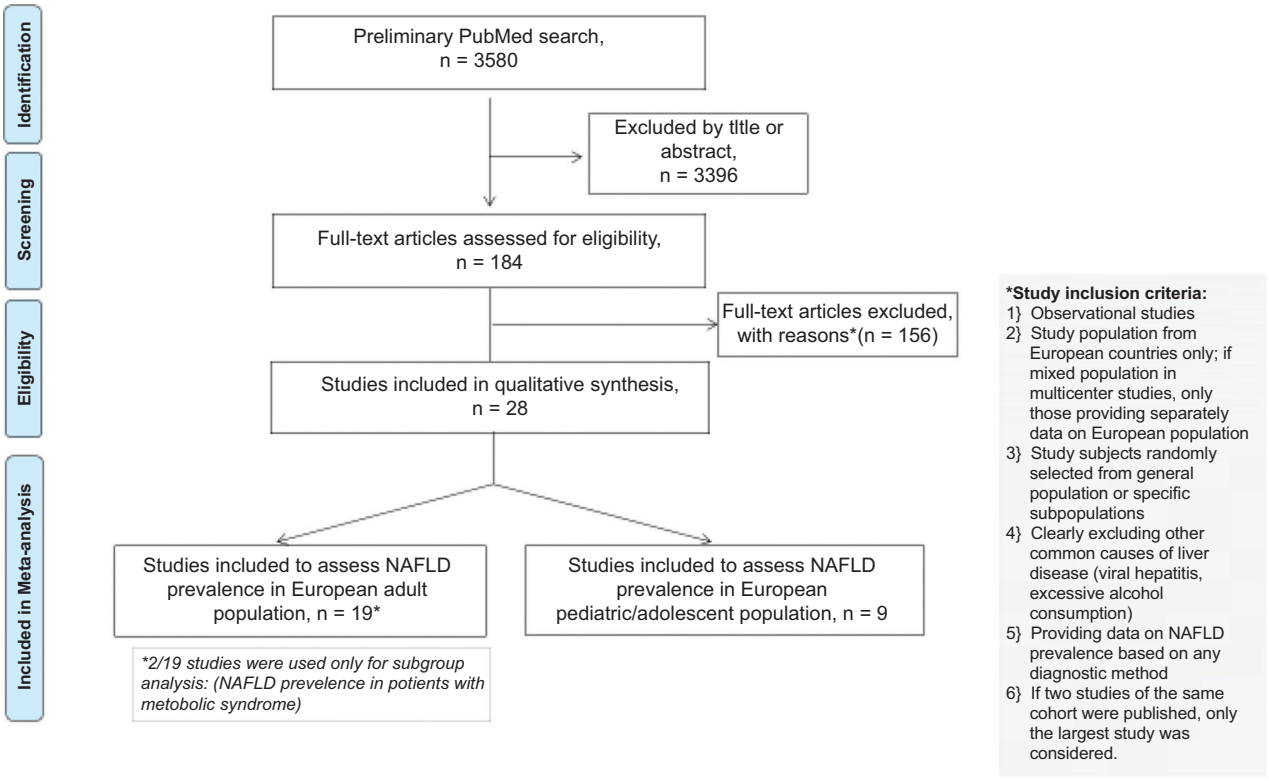
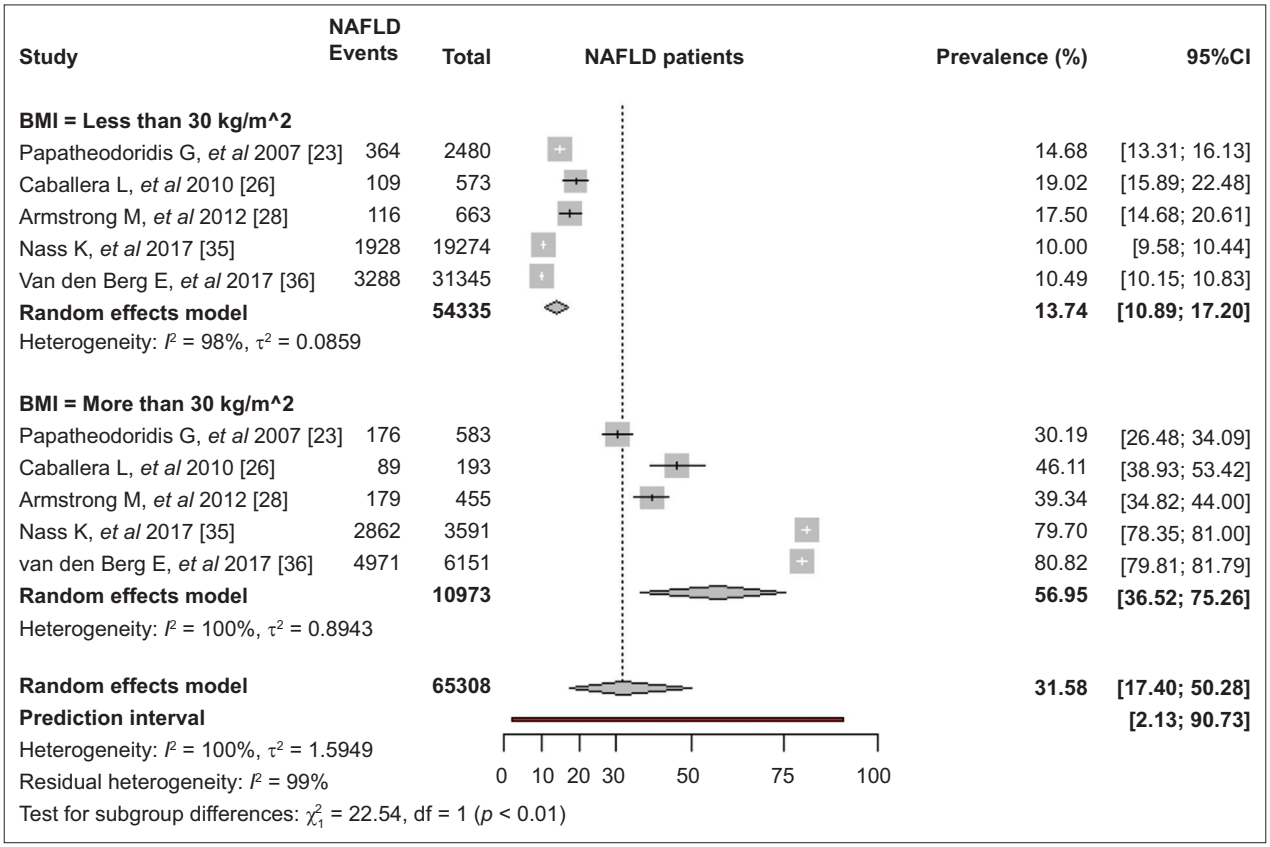
Supplementary material



Supplementary Figure 1 PRISMA flow diagram of study selection
NAFLD, nonalcoholic fatty liver disease



Supplementary Figure 2 Pooled prevalence of nonalcoholic fatty liver disease (NAFLD) in adults in Europe by presence of obesity defined by body mass index (BMI) ≥30 kg/m^2
CI, confidence interval

Supplementary Table 1 Published studies regarding the prevalence of nonalcoholic liver disease (NAFLD) in adults from European countries

First author, Publication year [Ref.]	Country	Study design	Newcastle-Ottawa scale	Age (years)	Male sex, n (%)	Diagnostic technique	Sample size, n	DM/ HTN/MetS/ BMI >30 kg/m^2, n	NAFLD cases, n	NAFLD prevalence, %
Sorrentino P, 2004* [21]	Italy	Cohort	7	58.0	30 (38)	Biopsy	80	36/62/80/80	78	97.5
Bedogni G, 2005 [22]	Italy	Case-Control	8	57.0	350 (85)	U/S	411	-/-/-/-	135	32.8
Papatheodoridis G, 2007 [23]	Greece	Case-Control	5	36.0	2404 (79)	Biochemical	3063	5/-/-/583	540	17.6
Kirovski G, 2010 [24]	Germany	Cohort	8	54.4	81 (52)	U/S	155	24/58/-/-	62	40
Kotronen A, 2010 [25]	Finland	Cohort	7	60.0	1106 (40)	Biochemical	2766	-/-/-/-	572	21
Caballera L, 2010 [26]	Spain	Cohort	7	53.0	323 (42)	U/S	766	146/323/97/193	198	25.8
Ruckert I, 2011 [27]	Germany	Cohort	9	-	1453 (48)	FLI	3009	335/-/-/-	1197	39.8
Armstrong M, 2012 [28]	United Kingdom	Cohort	5	60.0	628 (56)	U/S	1118	263/483/-/455	295	26.4
Soresi M, 2013* [29]	Italy	Case-Control	6	57.5	101 (50)	U/S	203	-/136/203/-	160	78.8
Caballera L, 2012 [30]	Spain	Case-Control	6	53.2	287 (41)	U/S	696	-/-/123/178	184	26.4
Kanerva N, 2014 [31]	Finland	Cohort	8	61.6	649 (40)	FLI	1611	225/1309/820/-	663	41.1
Ludwig U, 2015 [32]	Germany	Case-Control	8	40.7	674 (53)	U/S	1276	30/166/80/-	349	27.4
Graeter T, 2015 [33]	Germany	Cohort	6	42.0	663 (46)	U/S	1452	-/-/85/-	381	26.2
Markus M, 2016 [34]	Germany	Cohort	8	-	-	U/S	3090	-/-/-/-	937	30.3
Nass K, 2017 [35]	Netherlands	Cohort	5	44.0	8683 (38)	FLI	22865	324/8694/3387/3591	4790	20.9
Van den Berg E, 2017 [36]	Netherlands	Case- Control	6	44.0	14226 (38)	FLI	37496	1199/14021/6346/6151	8259	22
Akinkugbe A, 2017 [37]	Germany	Case- Control	7	47.0	1116 (49)	U/S	2481	465/-/-/-	654	26.4
Foschi F, 2018 [38]	Italy	Cohort	8	49.0	1079 (50)	U/S	2159	-/-/-/567	567	26.2
Leitao J, 2018 [39]	Portugal	Cohort	7	49.9	416 (53)	U/S	789	71/-/156/-	139	17.6

*Studies referred to specific population with MetS and used only for subgroup analyses

Ref., reference; DM, diabetes mellitus; HTN, hypertension; MetS, metabolic syndrome; BMI, body mass index; U/S, ultrasonography; FLI, fatty liver index; CAP, controlled attenuation parameter

Supplementary Table 2 Published studies regarding the prevalence of nonalcoholic liver disease (NAFLD) in children and adolescents from European countries

First author, Publication year [Ref.]	Country	Study design	Newcastle-Ottawa scale	Study population	Age, years	NAFLD in males, n (%)	Diagnostic technique	Sample size, n	NAFLD cases, n	NAFLD prevalence, %
Radetti G, 2006 [40]	Italy	Cross sectional	6	Overweight*/Obese*	mean: 10.9	7 (30.4)	MRI	44	14	31.8
Imhof A, 2007 [41]	Germany	Cross sectional	9	General	range: 12-20	8 (4.4)	U/S	376	9	2.4
			9	Overweight*/Obese*		8 (36.3)		51	8	15.6
Denzer C, 2009 [42]	Germany	Cross sectional	6	Obese*	range: 8-19	99 (41.0)	U/S	532	149	28.0
Wiegand S, 2010 [43]	Germany,Austria, Switzerland	Cohort	6	Overweight*/Obese* / Extremely obese*	mean: 12.4	1367 (14.4)	ALT, AST	16,390	1,898	11.5
Papandreou D, 2012 [44]	Greece	Cross sectional	7	Obese*	range: 8-15	20 (24.4)	U/S	82	35	42.6
Rorat M, 2013 [45]	Poland	Retrospective cohort	7	General	range: 0.1-18		Autopsy reports	265	11	4.2
Schlieske C, 2014 [46]	Germany	Cross sectional	7	Overweight*	mean: 14.2	79 (39.5)	U/S	447	121	27.1
Lawlor DA, 2014 [47]	United Kingdom	Cross sectional	8	General	mean: 17.9	17 (2.4)	U/S	1711	43	2.5
Valentini D, 2017 [48]	Italy	Cohort	6	Overweight/obesity with Down syndrome*	range: 5-18	-	U/S	44	36	81.8

*Studies referred to specific population and used only for subgroup analyses

Ref., reference; MRI magnetic resonance imaging; U/S, ultrasonography; ALT, alanine aminotransferase; AST, aspartate aminotransferase

Supplementary Appendix A Preferred reporting items for systematic reviews and meta-analyses (PRISMA) checklist[10]

Section/topic	#	Checklist item	Reported on page #
Title			
Title	1	Identify the report as a systematic review, meta-analysis, or both	1
Abstract			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number	2
Introduction			
Rationale	3	Describe the rationale for the review in the context of what is already known	5
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS)	5
Methods			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., web address), and, if available, provide registration information including registration number	N/A
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale	6
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched	6
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated	6
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis)	7
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators	7
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made	7
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis	7
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means)	7-8
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis	7-8
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies)	N/A
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified	7-8
Results			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram	9 & Fig. S1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations	9 & 29-33

(Contd...)

Supplementary Appendix A *(Continued)*

Section/topic	#	Checklist item	Reported on page #
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12)	Newcastle-Ottawa scale
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot	9-10, 14-15 & Fig. 1-5 & Fig. S2
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency	9-10 & 14-15
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15)	N/A
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16])	10-13 & 15-16
Discussion			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers)	17-20
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias)	20
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research	20
Funding			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review	4