Kliiniline küsimus nr 2

Kas kõigil alkoholi kuritarvitamise ja alkoholisõltuvuse kahtlusega patsientidel tuleb lisaks anamneesile kasutada diagnoosi täpsustamiseks struktureeritud diagnostilist intervjuud vs enesekohaseid teste vs laboratoorseid analüüse?

Kriitilised tulemusnäitajad:
uuringumeetodi tundlikkus ja spetsiifilisus, positiivne ja negatiivne ennustatav väärtus

Ravijuhendid

Kokkuvõte tõendusmaterjali kvaliteedist

Tõendusmaterjali kvaliteeti on hinnatud **Tabel 1.**

Kokkuvõte ravijuhendites leiduvatest soovitustest

Detailsed soovitused antud kliinilise küsimuse kohta on ära toodud mitmes ravijuhendis (NICE 2011, SIGN 2003, Australian 2009, Soome 2010, USPSTF 2013, NICE 2010b, NSW 2008, APA 2006, SAMHSA 2009) ning põhinevad mitmetele süstemaatilistele ülevaadetele, kirjanduse ülevaadetele ja ristlõikelistele uuringutele.

Kõik ravijuhendid soovitavad esmavalikuna lisaks anamneesile kasutada AUDIT testi. See soovitus põhineb mitmetel hea ja keskmise kvaliteediga süstemaatilistel ülevaadetel (Bradley et al 1999, Fiellin et al 2000, O´Connell et al 2004, Berner et al 2007, Kriston et al 2008, Berks & McCormick 2008) ning paljudel ristlõikelistel uuringutel.

Struktureeritud kliiniliste intervjuude kasutamise kohta alkoholi liigtarvitamise diagnostikas on üldiselt vähe infot, üks ravijuhend ei soovita neid kasutada (Australia 2009), teises ravijuhendis on öeldud, et neid peab kasutama spetsialiseeritud keskustes alkoholisõltuvusega patsientide põhjalikul käsitlemisel (NICE 2011).

NICE (2011) ütleb et diagnoosi täpsustamiseks võiks kasutada AUDIT, SADQ ja LDQ kuid nad on efetiivsed vaid juhul kui neid kasutatakse osana struktureeritud kliinilisest hindamisest (anamnees).

NICE (2010) ütleb et küsimustikuga skriinimine on suhteliselt täpne ning patsientidele vastuvõtlik.

SIGN (2003) soovitab esmatasandil alkoholi tarvitamise kahtluse korral kasutada AUDIT lühendatud versiooni.

NICE 2010 rõhutab, et AUDITi kasutamisel nastel, vanuritel (üle 65 a) ja noorukitel võib kasutada madalamat läbilõikeväärtust (>=7) vastavalt kliinilise kahtluse ning uurija professionaalsele otsusele.

Viiel süstemaatilisel ülevaatel põhinev ülevaade (Jonas et al 2013) näitab samuti et AUDIT on aksepteeritav test kasutamaks kõikide alkoholitarbimise häirete puhul. Siiski on AUDIT-i tundlikkus (61-96%) ja spetsiifilisus (85-96%) kõrgem alkoholisõltuvuse korral ning oluliselt varieeruvam alkoholi riskitarvitamise korral (tundlikkus 25-97%; spetsiifilisus 61-96%). Kuigi NICE (2011) soovitab alkoholi sõltuvuse tuvastamiseks ning tõsiduse määramiseks kasutada SADQ ja LDQ siis on nende kohta võrreldes AUDIT-iga oluliselt vähem tõenduspõhist materjali. Australia (2009) ütleb et kuigi SADQ on kasulik vahend alkoholitarvitamise häire hindamiseks on SADQ kohta vähe värsket teaduspõhist informatsiooni. Nii Soome (2010) ravijuhis, Austraalia (2009) kui ka SIGN (2003) soovitavad olukordades kus on limiteeritud ajaresurss kasutada lühemaid teste näiteks AUDIT-C.

Bradley *et al.* (2007) ja (Tunaanen *et al.*, 2007) leidsid, et AUDIT-C on sama tundlik alkoholi liigtarvitamise ja perioodilise riskitarvitamise suhtes nagu AUDIT ja seetõttu seda võib soovitada alkoholi liigtarvitamise skriininguks esmatasandi arstiabis eriti piiratud ajaresurssi tingimustes.

On mitmeid biomarkereid (GGT, MCV, CDT, ASAT) mis on kliiniliselt kasulikud hindamaks alkoholi tarvitamisest tekkinud organsüsteemide kahjustusi, jälgimaks ravi käiku ja tulemusi ning patsientide motiveerimiseks. Siiski on kõik ravijuhendid nõus et neid ei tuleks kasutada alkoholi tarvitamise häire diagnoosimiseks, sest see ei ole kuluefektiivne ning nad on oluliselt ebatäpsemad kui anamnees ja küsitlustestid. Need soovitused põhinevad nii süstemaatilistel ülevaadetel kui ka läbilõikelistel uuringutel (Salaspuro 1999, Scouller et al 2000, Aertgeerts et al 2001, Conigrave 2002, Schwan et al 2004).

Siiski ühes uuringus leiti, et ASAT, GGT ja CDT määratuna koos annavad paremaid tulemusi alkoholi liigtarbimise skriinimisel (Aithal et al., 1998) võrreldes sellistega võetuna eraldi.

Kõikides ravijuhistes rõhutatakse, et patsiendi käsitlemisel erilist tähelepanu tuleb pöörata komorbiidsete haiguste peale ning alkoholi liigtarvitamisest tingitud organkahjustuste peale, SAMHSA ütleb, et selline lähenemine on eriti oluline juhul, kui kõne alla tuleb medikamentoosne ravi.

NICE 2010, SAMHSA, NSW, APA soovitavad skriinida teiste psühhiaatriliste haiguste ning muu aine sõltuvuse suhtes, kusjuures APA pakub skriinida alkoholi väärtarvitamise suhtes kõiki patsiente, kes alluvad psühhiaatrilisele hindamisele muudel põhjustel.

NSW leiab, et kõiki alkoholi liigtarvitamisega patsiente on vaja regulaarselt hinnata suitsidaalsuse suhtes, kuna suitsidaalsuse määr selles patsientide grupis on kõrge.

Alcohol-use disorders. Diagnosis, assessment and management of harmful drinking and alcohol dependence. NICE, 2011 -

NICE (2011) soovitab esmaseks probleemi tuvastamiseks ja tõsiduse hindamiseks kasutada AUDIT (*The Alcohol Use Disorders Inventory Test*). Alkoholi sõltuvuse tuvastamiseks ning tõsiduse määramiseks soovitatavad nad SADQ (*The Severity of Alcohol Dependence Questionnaire*) ja LDQ (*The Leeds Dependence Questionnaire*). NICE (2011) tõdeb et kuigi on olemas mitmeid biomarkereid mida kliiniliselt kasutatakse alkoholitarvitamisest tekkinud haigusseisundite hindamisel, ravi tulemuse jälgimisel ja kui motiveerivat vahendit siis inimestel kes otsivad abi/ravi alkoholi kuritarvitamisele ei paku biomarkerid mingit eelist küsimustike ees ning on vähem tundlikud ja omavad väiksemat spetsiifilisust kui AUDIT test.

Neid patsiente, kelle AUDIT skoor on 15 või rohkem, on soovitatav suunata spetsialiseeritud keskustesse. Nende patsientide puhul on vajalik probleemi detailsem kirjeldus (k.a alkoholi tarbimise iseloom ja pikkus, teiste ainete kuritarvitamine, alkoholi tarbimisest tingitud psühhosotsiaalsed probleemid) koos struktureeritud kliinilise intervjuu läbiviimisega. On oluline identifitseerida kognitiivse võimekuse langust ning kaasuvaid somaatilisi ning psüühilisi häireid (alkoholisõltuvisega patsientidel esineb sageli komorbiidset depressiooni ning ärevishäiret, mille varajane identifitseerimine võib parandada ravitulemust.

The management of harmful drinking and alcohol dependence in primary care A national clinical guideline SIGN, 2003 –

SIGN (2003) soovitab esmatasandil alkoholi tarvitamise kahtluse korral kasutada AUDIT lühendatud versiooni või CAGE küsimustikku koos kahe tarbimisde kohta käiva küsimusega. EMO-s soovitatakse kasutada AUDIT lühendatud versiooni või PAT (*Paddington Alcohol Test*) inimestel kellel on alkoholi tarvitamisega seotud vigastus. Kui patsient registeerub uue perearsti nimistusse tuleks talt küsida alkoholi tarvitamise kohta. Biomarkerid on kasulikud kui tekib kahtlus et patsiendi poolt teatatu pole täpne, samuti patsiendi motiveerimiseks ning patsiendi monitoorimiseks ja ravitulemuste jälgimiseks.

Guidelines for the treatment of alcohol problems,Australian Government, Department of Health and Ageing, 2009 –

Austraalia (2009) ravijuhend soovitab üldrahvastikus kasutada AUDIT-i sest see on hetkel kõige tundlikum test. Otseseid alkoholi määra mõõtmisi hingeõhust ja/või verest soovitatakse kasutada hiljutise alkoholi tarbimise või intoksikatsiooni tuvastamiseks. Kaudseid biomarkereid tuleks kasutada ainult koos teiste skriiningu meetoditega (nt AUDIT) sest neil on madal tundlikkus ja spetsiifilisus.

Enne raviplaani koostamist on oluline rakendada süvenenud kliinilist uurimist nende patsientide puhul, kes ei reageerinud esialgsele soovitusele piirata alkoholi tarbimist, kellel on palju alkoholi tarbimisest tingituid probeeme või kes ise otsivad abi alkoholi liigtarbimisest jagu saamiseks. Oluline on hinnata patsiendi kognitiivset funktsiooni, füüsilist ja psüühilist heaolu, kaasuvate psüühiliste haiguste olemasolu, motivatsiooni, alkoholi tarbimise mustrit ning koguseid. Sellel eesmärgil sobib hästi poolstruktureeritud , nn. open-ended kliiniline intervjuu. Struktureerituid kliinilisi intervjuusid ei soovitata kasutada kliinilises praktikas, sest nad on liiga pikad.

Treatment of alcohol abuse. Current care guideline. Finland, 2010 –

Soome (2010) ravijuhend soovitab ohtliku alkoholi tarvitamise tuvastamiseks kasutada AUDIT täisversiooni, meestel läbilõikeväärtusega 8 ja naistel läbilõikeväärtusega 6. Lühendatud versiooni (AUDIT-C) kasutamisel peaks miinimum väärtus olema meestel 6 ja naistel 5. EMO kus on vähe aega sobib kasutamiseks ka 1/3 AUDIT küsimustikust mis hindab alkoholi tarvitamist, kuid siis peaks nii naistele kui meestele kasutama miinimum väärtust 2. Koos patsiendi nõusolekuga võib kasutada teatud biomarkereid nagu GGT, MCV ja CDT, kuid nad peaksid toetama kuid kindlasti mitte asendama intervjuud. Arsti kabinetis võib kasutada ka alkoholi sisalduse hingeõhust mõõtmist.

Screening and Behavioral Counseling Interventions in Primary Care to Reduce Alcohol Misuse: U.S. Preventive Services Task Force Recommendation Statement, USPSTF, 2013: USPSTF soovitab skriiningut koos sellele järgneva nõustamisega alkoholi liigtarvitamise vähendamiseks täiskasvanute seas. Alkoholi liigtarbimise skriinimiseks soovitatakse kasutada järgmisi enesehinnaguisi teste: AUDIT, AUDIT-C (AUDITi lühendatud version), ühest küsimusest koosnev skriininginstrument "Mitu korda viimase aasta jooksul te olete võtnud 5 (mehed) või 4 ja rohkem (naised ja üle 65-aastased) napsi päeval, mil tarbisite alkoholi?

Alcohol-use disorders: preventing harmful drinking, NICE public health guidance 24, NICE 2010b: Biokeemilisi markereid ei soovitata kasutada skriinimiseks alkoholi väärtarvitamise suhtes, kuid nad võivad olla abiks alkoholist tingitud organkahjustuste identifitseerimisel. Naiste, noorukite ja vanemate inimetse (üle 65 a) skriinimisel AUDITiga võib kasutada madalama äralõikepunkti probleemi identifitseerimiseks (nt >=7), sest see tõstab testi tundlikkust ja aitab avastada suurema numbri abivajajaid. Alkoholisõltuvusega patsiente soovitatakse suunata spetsialiseeritud sõltuvusravikeskustesse, kus neile teostatakse täielik psühhiaatriline hindamine.

Drug and Alcohol Psychosocial Interventions Professional Practice Guidelines, NSW Department of Health, 2008: NSW soovitab kasutada The Severity of Dependence Scale alkoholi sõltuvsega patsiendi käsitlemisel. Samuti on mõistlik uurida patsienti alkoholist tingitud organkahjustuste ja alkoholi liigtarvitamisega sageli koos esinevate haiguste suhtes (maksakahjustus, kardiovaskulaarsed haigused, peptiline haavand, HIV, hepatiit). Arvestades alkoholi liigtarvitamise kõrget komorbiidsust teiste psüühikahäiretega, siis on kõiki spetsiliseeritud keskuste patsiente soovitatav rutiinselt skriinida nende haiguste suhtes (nt. depressiooni ja ärevushäire suhtes), samuti oleks vajalik hinnata patsiendi suitsidaalsust ja valmisolekut muutumiseks (readiness to change scale).

Practice Guideline for the Treatment of Patients With Substance Use Disorders,2nd Edition, APA, 2006: APA soovitab kasutada AUDITi, CAGE või Drug Abuse Screening Testi alkoholi liigtarbimise sõelumiseks kõikidel psühhiaatrilisele hindamisele alluvatel patsientidel. Skriinimisele peaks järgnema füüsikaline läbivaatus kaasnevate füüsiliste haiguste ning alkoholi liigtarbimisest tingitud organkahjustuste identifitseerimiseks. Aine väärtarbimise kahtusega patsientid peaksid alluma täielikule psühhiaatilisele hindamisele (aine tarbimise sagedus ja kogus, tarbimise asjaolud ja soodustavad faktorid, kaasuvad haigused ja organkahjustused, tarbitavad ravimid ja teised ained, eelnevalt diagnoositud psühhiaatrilised ja somaatilised haigused ning nende ravi edukus, kognitiivse funktsiooni hindamine, olemasolevad kaasuvad psüühikahäired). Oluline on täieliku multiaksiaalse DSM-IV diagnoosi püstitamine, mis haaraks kõiki kaasuvaid psüühilisi ning somaatilisi haigusi. Patsiendi esmakordsel uurimisel ja ravi monitoorimisel võib kasutada aine määramist verest, uriinist ja väljahingatavast õhust. Samuti on oluline uurida patsiendi perekonnaanamneesi, motivatsiooni muutmiseks ja barjääre.

Incorporating Alcohol Pharmacotherapies Into Medical practice, SAMHSA, 2009:

SAMHSA soovitab uurida patsiente kaasuvate kehaliste ning psüühiliste haiguste suhtes, samuti uurida teiste ainete väärkasutamise suhtes (toksikoloogiline uriinianalüüs). Selline lähemine aitab identifitseerida patsiente, kellele võivad olla vastunäidustatud mõned alkoholi liigtarbimise ravis kasutatavad ravimid. Laboratoorsetest testidest soovitatakse kasutada: alkoholi sisaldus veres või väljahingatavas õhus, uriini toksikoloogiline analüüs, GGT, ASAT/ALAT, kliinilise vere analüüs, vitamiinide tase veres, kreatiniin, elektrolüüdid, rasedustest (naistel).

Laboratoorsed analüüsid võivad aidata identifitseerida alkoholi liigtarbimist, komorbiidseid haigusi, alkoholist tingitud organkahjustusi ning seisundeid, mille puhul on vastunäidustatud kas üks või teine interventsioon. Nad võivad ka motiveerida patsienti muutmisteks.

CDT võib kasutada aolkoholi liigtarbimise skriinimiseks ning ravitulemuste monitoorimiseks. (Bell, Tallaksen, Try, & Haug, 1994).

On tõendeid ka selle kohta, et ASAT, GGT ja CDT määratuna koos annavad paremaid tulemusi alkoholi liigtarbimise skriinimisel (Aithal et al., 1998) võrreldes sellistega võetuna eraldi. Skriinimiseks võib kasutada ka etüülglükuroniidi määramist, kuna see biokeemiline marker on näidanud kõrget tundlikkus alkoholi liigtarbimise suhtes.

Viited Ravijuhendid

The management of harmful drinking and alcohol dependence in primary care, a national clinical guideline, Scottish Intercollegiate Guidelines Network, 2003	SIGN 2003
Treatment of Alcohol Abuse, Current Care Guideline**,** The Finnish Medical Society Duodecim and the Finnish Society of Addiction Medicine,2010	Soome 2010
NSW Health Drug and Alcohol Psychosocial Interventions Professional Practice Guidelines, 2008	NSW 2008
Guidelines for the Treatment of Alcohol Problems, Australian Government Department of Health and Ageing, 2009	Austraalia 2009
Incorporating Alcohol Pharmacotherapies Into Medical Practice . Treatment Improvement Protocol (TIP) Series, Substance Abuse and Mental Health Services Administration, 2009.	SAMHSA 2009
Practice Guideline For The Treatment of Patients With Substance Use Disorders, 2nd Edition, American Psychiatric Association, 2006	APA 2006
Alcohol-use disorders: Diagnosis and clinical management of alcohol-related physical complications, National Institute for Health & Clinical Excellence, 2010	NICE 2010a
Alcohol-use disorders: preventing harmful drinking, NICE public health guidance 24, 2010	NICE 2010b
Alcohol-Use Disorders: Diagnosis, Assessment and Management of Harmful Drinking and Alcohol Dependence, National Institute for Health & Clinical Excellence, 2011	NICE 2011
World Federation of Societies of Biological Psychiatry (WFSBP) Guidelines for Biological Treatment of Substance Use and Related Disorders, Part 1: Alcoholism, 2008	WFSBP 2008
Evidence-based guidelines for the pharmacological management of substance abuse, harmful use, addiction and comorbidity: recommendations from The British Association for Psychopharmacology,2012	BAP 2012
Screening and Behavioral Counseling Interventions in Primary Care to Reduce Alcohol Misuse: U.S. Preventive Services Task Force Recommendation Statement, U.S. Preventive Services Task Force, 2013	USPSTF 2013

Tabel 1

Autor, aasta	Rahvastik	Hõlmatud üksik-uuringute arv	Valimi kogu-suurus	Tarvistamise iseloom	Kasutatud testid	Tund-likkus	Spetsii-filisus	PEV	NEV	Pos ROC	AUROC	Ratio of OR (CI 95%)	Kvaliteet
Fiellin et al. 2000 Süstemaatiline ülevaade	Esmatasand, täiskasvanud	38	Pole öeldud	Ohustav, ohtlik alkoholi tarvitamine/alkoholi riskitarvitamine Alkoholi kuritarvitamine või alkoholi sõltuvus	AUDIT ≥ 8 CAGE ≥ 2 SMAST ≥ 2 **Eluaegne** AUDIT ≥ 8 CAGE ≥ 2 SMAST ≥ 2 **Praegune** AUDIT ≥ 8 CAGE ≥ 2 SMAST ≥ 2	57-97% 14-84% 68% 33-91% 43-74% 21-82% 61-96% 77-94% 100	78-96% 75-97% 92% 84-96% 70-93% 77-97% 85-96% 79-97% 85%						Keskmise (*fair*) kvaliteediga
Bradley et al. 1998 Süstemaatiline ülevaade	Esmatasand ja sünnitusabi	5	6,724	Alkoholi sõltuvus viimase aasta jooksul Eluaegne alkoholi kuritarvitamine või sõltuvus	**EMO** AUDIT ≥8 AUDIT ≥7 CAGE ≥ 2 CAGE ≥ 1 TWEAK ≥ 3 TWEAK ≥ 2 BMAST ≥ 6 BMAST ≥ 5 BMAST ≥ 4 Trauma ≥ 2 **Esmatasand** CAGE ≥ 2 CAGE ≥ 1	N M 59-66% 90-91% 70% 92% 50-83% 58-84% 89% 93% 71-80% 81-89% 87% 95% 23-53% 24-40% 40% 29% 57% 47% 40-53% 51-52% 38-74% 47% 89%	N M 93-97% 79-86% 95% 75% 93-96% 80-90% 86% 67% 90-93% 74-80% 87% 56% 97-99% 96-99% 90% 80% 90% 80% 80-93% 70-83% 92-93% 93% 83%				N M 0.87 0.88 0.84 0.84 0.90 0.89 0.75 0.64 0.59 0.57 0.92		Keskmise (*fair*) kvaliteediga
Berner et al. 2007 Süstemaatiline ülevaade	Esmatasand, täiskasvanud, üliõpilased, eakad	13 esmatasandi + 1 üliõpilasi käsitlev	22,195	Alkoholi riskitarvitamine	**Esmatasand** AUDIT ≥8 **Haigla stats** AUDIT **EMO** AUDIT **Üliõpilased** AUDIT	31-89% 94% 72% 82%	83-96% 94% 88% 78%						Hea (*good*) kvaliteediga

					Vanurid AUDIT	55 -83%	 96%						
Kriston et al. 2008 Süstemaatiline ülevaade	Esmatasand, ambulatoorsed patsiendid, üldrahvastik	14	112-13,438 patsienti (mediaan 609)	Episoodiline ohustav alkoholi tarvitamine, alkoholi riskitarvitamine	**Alkoholi riskitarvitamine** AUDIT AUDIT-C **Alkoholi tarvitamise häire** AUDIT AUDIT-C **Mõlemad** AUDIT AUDIT-C					6.62 2.99 4.03 3.82 4.82 3.91			++
Berks & McCormick, 2008 Süstemaatiline ülevaade	Primary care (Studies testing screening in patients aged over 60 yrs were included.	9	6353	Ohustav alkoholi tarvitamine ja alkoholi kuritarvitamine Sõltuvus	**Alcohol abuse and dependence** CAGE >=1 MAST >=4 MAST>-3 MAST-G>=5 SMAST >=2 AUDIT >=8 **Hazardous or excessive drinking** CAGE >=1 CAGE>=2 AUDIT>=8 AUDIT-C >=3	**Alkohol abuse and dependence** 79,1 – 88% 91,4% 64-97,1% 69,8-91% 48% 33,3% 31-60% 14-38,9% 66,7% 100%	 55,8 – 88% 83,9% 66,7-79% 80,5-84% 100% 90,7% 92-100% 97-97,1% 95,3% 80,7%						++
O'Connell *et al.,* 2004 (Systematic review, +)	Elderly inpatients and outpatients	-	-	Alkoholi väärtarvitamine	MAST AUDIT ARPS sharps	91,4% 33-79% 93% 91%	83.9% 86-100% 66% 66%						+

Burns, 2010 Süstemaatiline ülevaade	Rasedad	5	6724	Alkoholi riskitarvitamine Sõltuvus	T-ACE TWEAK AUDIT-C AUDIT-C	69-88% 71-91% 95% 100%	71-89% 73-83% 98% 71%						
Jonas DE, Garbutt JC, Brown JM, Amick HR, Brownley KA, Council CL, et al. Screening, Behavioral Counseling, and Referral in Primary Care to Reduce Alcohol Misuse. Comparative Effectiveness Review	Primary care	5 süstemaatilise ülevaate analüüs: Berks et al. Int Psychogeriatr. 2008 Bradley et al. JAMA. 1998 Burns et al. Addiction. 2010 Fiellin et al. Arch Intern Med. 2000 Berner et al. J Stud Alcohol Drugs. 2007	6353 + 10865+ 6724+?? +22195	Alkoholi väärtarvitamine Ohustav alkoholi tarvitamine (male and female) Sõltuvus (male and	 AUDIT>=8 AUDIT-C>=3 Single-question screen AUDIT>=8 AUDIT-C>=3 CAGE>=2 SMAST <u>QF>7dr/w</u> AUDIT>=8	Male/Female 54-58% / 27% 92-95% / 6- - 73% 0.82 to 0.87 25%-97% 98% 49-84% 68% 50% 61-96%	Male/Female 95-96% / 90% 60-79% / 91-96% 0.61 to 0.79 61%-96% 57% 75-97% 92% 87% 85-96%						+

				female)	AUDIT-C>=3 CAGE>=2 LAST>=2 SMAST>=2 TWEAK>=3 <u>QF> 20 dr/wk</u> <u>QF> 4 dr/day</u>	90% 77-94% 63% 100% 75% 20% 47%	45% 79-97% 93% 85% 90% 97% 96%						
Reinert et al. 2002 Kirjanduse ülevaade	Erinevad asukohad	13	Pole öeldud	Alkoholi kuritarvitamine või alkoholi sõltuvus/liigtarvitamine Ohustav, ohtlik alkoholi tarvitamine	AUDIT	33-93% 97%	70-97% 69%	32-87% 65%	68-98%				Keskmise kvaliteediga *
Reinert et al. 2007 Kirjanduse ülevaade	Erinevad asukohad	26 AUDIT + 26 AUDIT lühiversioon	Pole öeldud	Ohustav, ohtlik alkoholi Tarvitamine, kuritarvitamine ja sõltuvus	**Täisversioon** AUDIT **Lühiversioon** AUDIT ≥ 3 AUDIT ≥ 4 AUDIT ≥ 5 AUDIT ≥ 6	24-100% 60-96% 38-100% 50-98% 39-87%	65-100% 52-95% 49-98% 58-98% 78-100%	16-95%	84-100%		0.79-0.99		Keskmise kvaliteediga*
Aalto *et al.,* 2006 Cross-sectional diagnostic evaluation, ++) Finland	Primary care (ii) 40 year old females		894	Tugev alkoholi tarvitamine	AUDIT >=6 AUDIT-C>=5 AUDIT-PC>=4 AUDIT-QF>=4	84-95% for all	83-90 %for all						++

Tuunanen *et al.* 2007 Finland Cross-sectional diagnostic evaluation,	45 yr old men in primary care, Finland.			Episoodiline ohustav aölkoholi tarvitamine	AUDIT>=8 AUDIT>=7 AUDIT-C>=6 AUDIT-3>=2	Moderaate/heavy drinkers 60%/65% 73%/72% 70%/72% 0%/72%	Moderaate/heavy drinkers 81%/81% 76%/76% 77%/77% 73%/73%				0,824 (95%CI 0.789 to 0.859) 0,829(95% CI 0.795 to 0.864) 0.779 (95%CI 0.739 to 0.818).		++
Bradley *et al.,* 2007 (Cross-sectional diagnostic evaluation,USA				Alkoholi väärtarvitamine	 AUDIT-C>=4 AUDIT-C>=3 AUDIT-C>=2 AUDIT >=5 AUDIT>=4 AUDIT>=3	Male/Female 86%/no data No data/73% No data/89% 81%/no data 91%/ no data No data/ 79%	Male/Female 89%/no data No data/91% No data/78% 90%/no data 80%/no data No data/ 87%				Male/Female 0,89/0,91		++
Frank *et al.,* 2008 (Cross-sectional diagnostic evaluation, ++) USA	Primary care		1292	Alkoholi väärtarvitamine	AUDIT-C >=3 AUDIT-C>=4	Female 67-85% Male 76-85%	 88-92% 84-93%						++
Newcombe *et al.,* 2005 Cross-sectional diagnostic evaluation,	Primary care		150		ASSIST	Alkohol abuse 71% Alcohol Dependence 86%	 63% 77%				0,76 0,83		+
ASSIST Humeniuk *et al.,* 2008 Cross-sectional diagnostic evaluation,	Primary care and specialized settings		1047		ASSIST	Abuse Dependence	83% 67%	79% 60%			0,87 0,7		++
Bisson &	male soldiers		58	Alkoholi	CAGE	97%							++

Milford-Ward, 1994 (Cross-sectional diagnostic evaluation, ++) UK :	under the age of 30			väärtarvitamine	MAST SADQ MCV GGT CDT	100%% 77% 14% 11% 31%							
Coulton *et al.* 2006 UK Cross-sectional diagnostic evaluation,	Primary care		1794	Ohustav alkoholi tarvitamine Iganädalane ohustav alkoholi tarvitamine Igakuine ohustav alk. tarv Sõltuvus	AUDIT>=8 Ohustav alkoholi tarvitamine Iganädalane ohustav alkoholi tarvitamine Igakuine ohustav alk. tarv Sõltuvus CDT ASAT	69% 75% 66% 84%	98% 90% 97% 83%	95% 71% 91% 41%	97%		0,94-0,96 for all alkohol use disorders 0,7 0,5		++
Aertgeerts *et al.* 2001 Belgium Cross-sectional diagnostic evaluation,	(i) General practice (ii) Patients (n=1992) aged over 18 years.		1992	Sõltuvus ja kuritarvitamine	AUDIT>=5 AUDIT>=8 AUDIT-c>=5 AUDIT-PC>=5 CAGE>=1 CAGE>=2	Male/female 82%/65% 60,6/50% 78%/50% 68% / 56,4% 62,1% / 54,3 47,7% / 37	Male/female 73%/92% 90,3/98,7% 75%/93% 84% / 95,7% 81,2% / 92 92,3% / 97	Male/female 32%/27 49,7/64 32,8%/26% 40%/38 34,2/24 49/35	Male/female 90%/96%		Male: AUDIT - 0,85 AUDIT-C 0,83 AUDIt-PC – 0,83 Female: AUDIT – 0,87 AUDIT-C 0,82		++

					MCV GGT CDT	39,4%/41,3% 6,8%/6,5% 18,2/15,2%	39,4% / 79,3% 95,5% / 91,8% 95,6% / 95,5%	19,9%/8,6% 19,1% / 3,6% 39,0% / 14%	88,7% / 96,6% 86,7% / 95,4% 88% / 96%		Lab.. tests: Female 0,6-0,67 Male 0,57-0,65		
Scouller et al 2000 Süstemaatiline ülevaade	Pole öeldud	110	Pole öeldud	Alkoholi kuritarvitamine, ohtlik alkoholi tarvitamine/alkoholi riskitarvitamine	CDTect (orig) vs GGT CDTect (mod) vs GGT IEF vs GGT AXIS vs CDTect (mod) IEF vs CDTect (mod)							27.1 (3.8 -193) 1.3 (0.6–2.7) 3.4 (0.6–19.7) 1.2 (0.4–3.1) 3.4 (1.3–9.0)	Keskmise kvaliteediga*
Salaspuro et al 1999 Süstemaatiline ülevaade	Erinevad asukohad (esmatasand, statsionaarne osakond jne)	54	Pole öeldud	Ohustav/ohtlik alkoholi tarbimine Päevane tarbimine >40g/>60g, alkoholism	**Tugev alkoholi tarbimine/alkohooli kud** CDT GGT MCV (%) ASAT (%) ALAT (%) CDT+GGT (%) **Esmatasandil ja noores rahvastikus** CDT GGT MCV (%) ASAT (%) ALAT (%) CDT+GGT (%) **Statsionaarne osakond** CDT GGT MCV (%) ASAT (%)	 29-85% 11-85% 28-67% 17-85% 22-65% 57-95% 0-61% 10-61% 12-63% 7-56% 11-40% 29-85% 15-69% 41-73%	 0(13)-100%? 0(25)-95%? 93-98% 0(13)-98%? 0(13)-87%? 79% 33-96% 80-100% 77-94% 92-97% 85-98% 81-92% 81-98% 63-85%						Hea kvaliteediga*

					ALAT (%) CDT+GGT (%) **Maksahaigusega patsientidel** CDT GGT MCV (%) ASAT (%) ALAT (%) CDT+GGT (%)	27-54% 46-50% 35-47% - 35-91% 44-96% 19-87% 75% 64% 96%	85-91% 77-82% 85-86% - 36-100% 18-100% 63-100% 55% 54% 59%						
Schwan et al 2004 Open multicentre study Juht-kontroll uuring?	Prantsusmaa - ambulatoorsed ravikeskused ja spetsialiseerunud statsionaarsed osakonnad	-	362 uuritavat (103 Alkoholi kuritarvitajat, 160 alkoholi sõltuvusega ja 99 kontrolli).	Kuritarvitamine Ja sõltuvus	**Alkoholi kuritarvitamine** Kokku GGT %CDT TIA GGT koos CDT Naised GGT %CDT TIA GGT koos CDT Mehed GGT %CDT TIA GGT koos CDT **Alkoholisõltuvus** Kokku GGT %CDT TIA GGT koos CDT Naised GGT %CDT TIA GGT koos CDT Mehed GGT %CDT TIA GGT koos CDT	 0.56 (0.47–0.66) 0.80 (0.72–0.87) 0.90 (0.85–0.96) 0.33 (0.15–0.51) 0.67 (0.49–0.85) 0.78 (0.62–0.93) 0.68 (0.57–0.79) 0.86 (0.78–0.95) 0.97 (0.94–1.00) 0.86 (0.80–0.91) 0.91 (0.87–0.96) 0.99 (0.98–1.00) 0.75 (0.60–0.90) 0.84 (0.71–0.97) 1.00 (1.00–1.00) 0.88 (0.82–0.94) 0.93 (0.88–0.98) 0.99 (0.98–1.00)	 0.77 (0.68–0.85) 0.83 (0.75–0.90) 0.63 (0.53–0.72) 0.74 (0.63–0.85) 0.86 (0.77–0.95) 0.63 (0.50–0.76) 0.81 (0.69–0.93) 0.79 (0.66–0.91) 0.62 (0.47–0.77) 0.77 (0.68–0.85) 0.83 (0.75–0.90) 0.63 (0.53–0.72) 0.74 (0.63–0.85) 0.86 (0.77–0.95) 0.63 (0.50–0.76) 0.81 (0.69–0.93) 0.79 (0.66–0.91) 0.62 (0.47–0.77)						Hea kvaliteediga*

Aithal at al, 1998 Cross-sectional diagnostic evaluation	General medical clinics		91	Heavy drinking	**CDT** **GGT** **MCV** **CAGE>=2** CDT, GGT ja MCV võetuna koos	69% 77% 54% 69% 85%	81% 81% 85% 95% 88%	41% 43% 41% 75% 61%					
Conigrave et al 2002 Multicentre study Ristläbilõikeline uuring?	Erinevad asukohad, peamiselt kogukonnast ja alkoholi sõltuvuse ravikeskused	-	1863 uuritavat viiest riigist (Austria, Brasiilia, Kanada, Soome, Jaapan)	Kõrge riskitarvitamine viimase kuu jooksul (*high-risk drinking*)	**Mehed (>80 g päevas)** CDT GGT AST CDT ja/või GGT **Naised(>40 g päevas)** CDT GGT AST CDT ja/või GGT	 60 67 45 86 29 44 23 61	 92 74 90 68 92 90 97 81						Hea kvaliteediga uuring*
Wetterling *et al.,* 1998 Cross-sectional diagnostic evaluation	Erinevad kohad			Sõltuvus Riskitarvitamine	CAGE (≥ 2) MAST (≥ 5) CDT (>26 mg/l females; > 20 mg/l males, as reported) GGT (>19 U/l females; >28 U/l males) MCV (≥ 95 fl) 33.3% CAGE (≥ 2) MAST (≥ 5) CDT (>26 mg/l females; > 20 mg/l males, as reported) GGT (>19 U/l	49,1% 47,3% 47,3% 57,6% 33,3% 53.8% 50.0% 53.8% 55.9%	98.0% 98.7% 88.6% 69.5% 88.4% 89.2% 89.9% 82.4% 62.9%	90.0% 92.9% 60.5% 47.5% 52.8 46.7% 46.4% 35.0% GGT 26.8%					

					females; >28 U/l males) MCV (≥ 95 fl) 33.3%	 38.5%	 84.9%	 31.3%					
Josep Maria Haro at al, 2006, clinical reappraisal study	Mental health centers	4	21,425 Respondents	Sõltuvus Kuritarvitamine	CIDI vs SCID CIDI vs SCID	43,1% 64,1%	99,9% 98,1%	98,7% 88,1%	91,9% 92.7%		AUROC 0,72 Kappa 0,56 AUROC 0,81 Kappa 0,7	(105.8–7266.2) (28.0–311.3)	
The MINI International neuropsychiatric interview, David Sheehan, 1998, Cross-sectional	Mental health centers	2	636	Sõltuvus	MINI vs CIDI MINI vs SCID	83% 80%	97% 95%	91% 64%	94% 98%		Kappa 0,82 0,67 Test-retest kappa 0,86		
WHO cross-sectional study, Üstün at al, 1997	Erinevad kohad	12	1825	Sõltuvus Kuritarvitamine (ICD10 – riskitarbimine)	SCAN vs DSM-IV SCAN vs ICD-10 CIDI vs DSM-IV CIDI vs ICD-10 AUDADIS vs DSM-IV AUDADIs vs ICD-10 SCAN vs DSM-IV SCAN vs ICD-10 CIDI vs DSM-IV CIDI vs ICD-10						Kappa 0,73 0,76 No 0,75 0,66 0,68 0,6 0,35 No 0,6		

					AUDADIS vs DSM-IV AUDADIS vs ICD-10						0,49 0,17		
Test-retest reliability of CIDI-Auto, Rubio-Stipec, 1999				Sõltuvus Riskitarbimine	CIDI vs DSM-IV/ICD10 CIDI vs DSM-IV/ICD10						KAPPA 0,7-0,95 0,45-0,66		
Deborah Hazin, 2006, PRISM, cross-sectional	Psychiatric settings, among substance abusers	1	Kuritarvitamine	Sõltuvus Abuse	PRISM PRISM						Kappa 0,82 0,56		

*** - koostaja poolt hinnatud** **+ - NICE 2010 ravijuhendi hinnang** **fair/good - US task force hinnang**

Viited

Süstemaatilised ülevaated ja ristläbilõikelised uuringud

Kokkuvõtte (abstract või kokkuvõtlikum info)	Viide kirjandusallikale
SIGN, 2003; AUSTRALIA, 2009; FINLAND, 2010, NICE 2010b, USPSTF 2013	
A search of MEDLINE for years 1966 through 1998 was performed. Studies that were performed in primary care, and reported the performance characteristics of screening methods for alcohol problems against a criterion standard were included. Thirty-eight studies were identified. Eleven screened for at-risk, hazardous, or harmful drinking; 27 screened for alcohol abuse and dependence. RESULTS: The Alcohol Use Disorders Identification Test (AUDIT) was most effective in identifying subjects with at-risk, hazardous, or harmful drinking (sensitivity, 51%-97%; specificity, 78%-96%), while the CAGE questions proved superior for detecting alcohol abuse and dependence (sensitivity, 43%-94%; specificity, 70%-97%). Study Quality: High quality study. Limitatisons - may not include all studies for screening to this date + the diagbosis criteria for different conditions varies. Conflicting or inconsistent result may come from the definition used for the disorder.	**Fiellin** DA, Reid MC, O.Connor PG. Screening for alcohol problems in primary care: a systematic review. Arch Intern Med 2000;160(13):1977-89.

SIGN, 2003, USPSTF 2013	
The study describes the performance of alcohol screening questionnaires in female patients. MEDLINE was searched from 1966 to July 1997 for alcoholism or alcohol-drinking and for CAGE, AUDIT, BMAST, TWEAK, T-ACE, MAST, SMAST, or SAAST. Thirteen articles (9 studies) met the inclusion criteria and were reviewed. Reviewed studies presented data for women comparing brief alcohol screening questionnaires with valid criterion standards for heavy drinking (> or =2 drinks per day) or alcohol abuse or dependence in US general clinical populations. Sensitivities, specificities, and areas under receiver operating characteristic curves (AUROCs) were extracted. RESULTS: The CAGE questionnaire had AUROCs of 0.84 to 0.92 for alcohol abuse and dependence in predominantly black populations of women, but using the traditional cut point of 2 or more resulted in low sensitivities (38%-50%) in predominantly white female populations. The TWEAK and Alcohol Use Disorders Identification Test (AUDIT) questionnaires had high AUROCs (0.87-0.93) for past-year alcohol abuse or dependence in black or white women, but had sensitivities less than 80% at traditional cut points. For detecting heavy drinking, the AUDIT questionnaire had AUROCs of at least 0.87 in female primary care patients. Study Quality: Good quality study, limitation - about 2/3 of the study population is black women.	**Bradley** KA, Boyd-Wickizer J, Powell SH, et al. Alcohol screening questionnaires in women: a critical review. JAMA 1998;280:166-71.

FINLAND, 2010, USPSTF 2013	
MEDLINE, PsycINFO, Science Citation Index Expanded, BIOSIS Previews, Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDION, and Cochrane Library databases were searched for relevant studies. The criteria for inclusion were a valid reference standard, AUDIT consisting of 10 items, avoiding bias that may result from how the	**Berner** MM, Kristol L, Bentele M, et al. The alcohol use disorders identification test for detecting at-risk drinking: a

reference standard was obtained, and when and how many participants were tested. Data were extracted independently by two reviewers. Data synthesis was performed by applying direct pooling of proportions and random effects model for likelihood ratios and diagnostic odds ratio RESULTS: Twenty-three studies were included in the systematic review, 19 of which were included in the meta-analysis. Total number of patients was 22,195. With a cutoff of 8 points, sensitivity ranged from .31 to .89 and specificity ranged from .83 to .96 across the eight studies conducted in primary care. A single trial in general hospital inpatients found a sensitivity of .93 and a specificity of .94; another trial in emergency-department patients found a sensitivity of .72 and a specificity of .88. A study in university students found a sensitivity of .82 and a specificity of .78. Three studies in elderly patients found sensitivities between .55 and .83 at a pooled specificity of .96. Its use should be restricted to primary care populations, inpatients, and elderly patients.	systematic review and meta-analysis. J Stud Alcohol Drugs 2007;68:461-73.

FINLAND, 2010	
This review compared the accuracy of a three item (Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) and a ten item (AUDIT) test for detecting unhealthy alcohol use in adults.The authors searched MEDLINE, EMBASE, CINAHL, Web of Science, PsycINFO and BIOSIS Previews from 1998 to July 2008 with no language restrictions. Search terms were reported. Citation searching and checking of reference lists were used to identify additional publications. Diagnostic accuracy studies that administered both AUDIT and AUDIT-C (a three item version of AUDIT comprising questions related to alcohol consumption) were eligible for the review. RESULTS: Fourteen studies (n=25,030) were included; sample size ranged from 112 to 13,438 (median 609). Ten studies used consecutive or random selection of patients and 13 had only a short delay between the index and reference tests. Only about half of the studies reported blinding of reference or index test results. No statistically significant differences were found between AUDIT and AUDIT-C for accuracy in detecting risky drinking, alcohol use disorders or unhealthy alcohol use in primary care. Studies on general population samples (four studies, n=5,600) and in-patients (two studies, n=345) suggested that AUDIT might be more accurate (higher sensitivity and/or specificity) than AUDIT-C for identifying alcohol dependence but the results were not consistent across studies.	**Kriston** L, Hölzel L, Weizer AK, et al. Meta-analysis: are 3 questions enough to detect unhealthy alcohol use? Ann Intern Med 2008;149:879-88.

FINLAND, 2010	
A literature search that used EtOH as a database was conducted to identify studies published on the AUDIT through September 2001. 13 studies were included in the analysis. RESULTS: Although more research is needed on non-English versions to establish their psychometric properties, at least in its English edition, the AUDIT demonstrates sensitivities and specificities comparable, and typically superior, to those of other self-report screening measures. Test-retest reliability and internal consistency are also quite favorable. For males, the AUDIT-C, a shortened version of the AUDIT, appears approximately equal in validity to the full scale. Study Quality: Good quality study. Does not mention the inclusion and exclusion criteria. It does not include information for the number on participants in every study (only some mentioned). The study did not calculate a pooled sensitivity and specifity for AUDIT.	**Reinert DF**, Allen JP. The Alcohol Use Disorders Identification Test (AUDIT): A Review of Recent Research Alcohol Clin Exp Res 2002;26:272-9.

FINLAND, 2010	
This is an update to the previous review conducted by the authors in 2002 to review AUDIT test. The current article summarizes new findings and integrates them with results of previous research. The study reviews 26 articles that have used the full AUDIT and 26 articles that used abbrevated versions of the AUDIT. RESULTS: A growing body of research evidence supports the criterion validity of English version of the AUDIT as a screen for alcohol dependence as well as for less severe alcohol problems. Nevertheless, the cut-points for effective detection of hazardous drinking as well as identification of alcohol dependence or harmful use in women need to be lowered from the originally recommended value of 8 points. The AUDIT-C, the most popular short version of the AUDIT consisting solely of its 3 consumption items, is approximately equal in accuracy to the full AUDIT. Psychometric properties of the AUDIT, such as test–retest reliability and internal consistency, are quite favorable. Continued research is urged to establish selective inclusion of alcohol biomarkers with the AUDIT in some instances. Research continues to support use of the AUDIT as a means of screening for the spectrum of alcohol use disorders in various settings and with diverse populations Study Quality: The study doesent mention how the researchers searched for the articles, when the databases were searched and which databases were used. It only mentions the size of the subject group for some studies. It does not mention the limitations of the studie or the possible source of bias. It doesent give information about pooled sensitivity and specifity for AUDIT.	**Reinert DF**, Allen JP. The Alcohol Use Disorders Identification Test: An update of research findings. Alcohol Clin Exp Res 2007;31:185-99

SIGN, 2003; AUSTRALIA, 2009; FINLAND, 2010	
Authors performed a systematic review using summary ROC analysis of 110 studies prior to June 1998 on the use of CDT in the detection of alcohol dependence or hazardous/harmful alcohol use. RESULTS: In studies examining CDT and GGT in the same subjects, the original Pharmacia CDT assay was significantly more accurate than GGT, but the modified CDTect assay did not perform as well as the original and was not significantly better than GGT. The accuracy of the AXIS %CDT assay was statistically indistinguishable from modified CDTect. Several CDT assay methods appeared promising, in particular, liquid chromatography (chromatofocusing, HPLC, fast protein liquid chromatography) and isoelectric focusing, but there were insufficient paired studies from which to draw firm conclusions. In studies published before June 1998, the results obtained with commercially available CDT assays were not significantly better than GGT as markers of excessive alcohol use in paired studies.	**Scouller K,** Conigrave KM, Macaskill P, et al. Should we use carbohydrate-deficient transferrin instead of gamma-glutamyltransferase for detecting problem drinkers? A systematic review and metaanalysis. Clin Chem 2000;46:1894-902.

SIGN, 2003; AUSTRALIA, 2009;	
Medline database from 1966 to November 1998 was searched. Only the studies (n=54) in which CDT was compared either to the conventional or new biological markers of alcoholism, heavy drinking, or alcohol use were selected for further evaluation. RESULTS: Two prospective studies indicate that in men CDT is slightly more sensitive than GGT in reflecting changes in these markers caused by drinking of a moderate and fixed amount of alcohol. In one prospective study, CDT was slightly but not significantly better marker than conventional laboratory markers (ASAT, ALAT, GGT and b-Hex) in the	**Salaspuro M.** Carbohydrate-deficient transferrin as compared to other markers of alcoholism: a systematic review. Alcohol 1999;19:261-71.

identification of men drinking more than 400 g of alcohol daily. Six prospective treatment outcome studies indicate that CDT may be a significantly more sensitive marker than GGT in the detection of relapses in male alcoholics. However, these two tests can also be considered to be complementary markers. In the detection of relapses the baseline values of CDT and GGT should be measured and compared on individual basis to the pretreatment values. In selective materials comprising male alcoholics and heavy drinkers, CDT was found to be a slightly more sensitive marker than GGT in seven retrosepctive studies. In five studies, GGT was slightly better. However, the differences between CDT and GGT in general were not statistically significant. In three studies, the combined use of CDT and GGT improved the sensitivity but with the expense of specificity. Only four studies included women and in three of these the sensitivity of GGT was better than that of CDT, whereas in one study CDT was better than GGT in the detection of female heavy drinkers. Seven studies performed in primary health care settings and among young populations demonstrate that the performance of CDT in the identification of heavy and problem drinkers in this type of populations is very low, although comparable to the poor performance of the conventional laboratory markers, too. According to seven studies, the sensitivity of GGT is slightly better than that of CDT in the identification of excessive alcohol consumption among hospitalized male and female patients. However, in this type of hospital setting, the specificity of CDT is markedly higher than that of GGT. There is some evidence indicating that the performance of the tests can be improved with the combined use of both tests. Eight studies indicate that both in men and women CDT is a better marker than GGT in the identification of alcohol abuse among patients with alcoholic and nonalcoholic liver diseases.	

NICE 2011	
The aim of this study was to evaluate, in terms of sensitivity and specificity, the performance of the new Bio-Rad %CDT TIA kit and GGT assay for identifying alcohol abuse and alcohol dependence (according to the DSM-IV criteria). METHODS: An open multicenter study (30 centers) over 3 months, including patient groups of "abusers," "dependents," and controls, was conducted in France. RESULTS: In alcohol abuse, the sensitivity of GGT was 0.56, and that of CDT was 0.80; in alcohol dependence, the sensitivity of GGT was 0.86, and that of CDT was 0.91. The specificity of GGT was 0.77, and that of CDT was 0.83. The association of GGT with CDT increased sensitivity for alcohol abuse to 0.90 and for alcohol dependence to 0.99, but it appreciably decreased specificity (0.63). %CDT is the better screening marker for alcohol abuse and dependence, but GGT is still a useful marker for the detection of alcohol dependence. As an assay method, the second-generation Bio-Rad %CDT immunoassay can be recommended for routine CDT measurement.	**Schwan R,** Loiseaux MN, Schellenberg F, et al. Multicenter validation study of the %CDT TIA kit in alcohol abuse and alcohol dependence. Alcoholism: Clinical and Experimental Research 2004;28:1331–37.

SIGN, 2003	
The WHO/ISBRA Collaborative Study allows assessment and comparison of CDT, GGT, and aspartate aminotransferase (AST) as markers of drinking in a large, well-characterized, multicenter sample	**Conigrave** KM, Degenhardt LJ, Whitfield JB, Saunders JB, Helander A, Tabakoff B, et al. CDT, GGT, and AST as markers of alcohol use: the

METHODS: A total of 1863 subjects were recruited from five countries (Australia, Brazil, Canada, Finland, and Japan). Recruitment was stratified by alcohol use, age, and sex. Demographic characteristics, alcohol consumption, and presence of ICD-10 dependence were recorded using an interview schedule based on the AUDADIS. CDT was assayed using CDTect and GGT and AST by standard methods. Statistical techniques included receiver operating characteristic (ROC) analysis. Multiple regression was used to measure the impact of factors other than alcohol on test performance. RESULTS: CDT and GGT had comparable performance on ROC analysis, with AST performing slightly less well. CDT was a slightly but significantly better marker of high-risk consumption in men. All were more effective for detection of high-risk rather than intermediate-risk drinking. CDT and GGT levels were influenced by body mass index, sex, age, and smoking status.	WHO/ISBRA collaborative project. Alcohol Clin Exp Res 2002;26(3):332-9.
USPSTF, 2013, NICE 2010b (Berks, 2010	
Objectives. To assess the effectiveness of screening followed by behavioral counseling for adolescents and adults with alcohol misuse in primary care settings. This report's main objective is to conduct a systematic review of the effectiveness of screening followed by behavioral counseling, with or without referral, for alcohol misuse in primary care settings, addressing seven questions. We allowed inclusion of screening and behavioral interventions for the full spectrum of alcohol misuse, as long as subjects were identified by screening in a primary care or primary care-like setting; KQ 1: What is the direct evidence that screening for alcohol misuse followed by a behavioral counseling intervention, with or without referral, leads to reduced morbidity, reduced mortality, or changes in other long-term (6 months or longer) outcomes (e.g., health care utilization, sick days, costs, legal issues, employment stability)? KQ 2: How do specific screening modalities compare with one another for detecting alcohol misuse? KQ 3: What adverse effects are associated with screening for alcohol misuse and screening-related assessment? **Data Sources.** We searched MEDLINE®, Embase®, the Cochrane Library, CINAHL®, PsycINFO®, and the International Pharmaceutical Abstracts from January 1, 1985, to August 30, 2011. We used either Medical Subject Headings (MeSH) as search terms when available or keywords when appropriate, focusing on terms to describe the relevant population and the screening and behavioral interventions of interest. We limited searches to English-language publications. For Key Question 2, we focused on systematic reviews and meta-analyses, and we did not restrict the publication date. We supplemented the findings with information from other sources to fill in important gaps. For all other Key Questions, we included controlled trials published in 1985 or later and systematic reviews and meta-analyses published in the last 5 years that directly address our Key Questions. **Systematic reviews included:** 1. 1 **Berks** J, McCormick R. Screening for alcohol misuse in elderly primary care patients: a **systematic literature review**. Int Psychogeriatr. 2008 Dec; 20(6):1090-103. PMID: 18538045.	**Jonas DE, Garbutt JC, Brown JM, Amick HR, Brownley KA, Council CL, et al.** Screening, Behavioral Counseling, and Referral in Primary Care to Reduce Alcohol Misuse. **Comparative Effectiveness Review** No. 64. Rockville, MD: Agency for Healthcare Research and Quality; July 2012. Accessed at www.ncbi .nlm.nih.gov/books/NBK99199/ on 16 April 2013. A total of 23 trials and six systematic reviews were included.

Population Primary care, adults 60 or older **Number of Studies Included : 9** **Total Number of Patients: 6353** Sample size ranged from 103 to 5,065. **List of Screening Instruments Included :** CAGE, MAST, SMAST, AUDIT ARPS, shARPS SMAST-G **Alcohol Misuse** Hazardous drinking Alcohol abuse or dependence **Quality Rating : fair** **Tulemused:** Detecting alcohol abuse and dependence: CAGE (three studies) at a cut-off of 1 or more was shown by Receiver Operator Curves from two of the studies to be the most efficient. Sensitivity ranged from 79.1% to 88% and specificity ranged from 55.8% to 88%. Variations of MAST (four studies): The Receiver Operator Curves from two studies showed a cut-off of 4 or more was most efficient. However, only one study used used this cut-off, which gave a sensitivity of 91.4% and a specificity of 83.9%. A Receiver Operator Curve for the MAST-G suggested a cut-off of 5 or more. Two studies that used the MAST-G found that sensitivity ranged from 69.8% to 91% and specificity ranged from 80.5% to 84%. Detecting hazardous or excessive drinking: AUDIT (one study): a cut-off of 8 or more gave a sensitivity of 33.3% and a specificity of 90.7%. CAGE (three studies): two studies looked at a cut off of 1 or more and found that sensitivity ranged from 31% to 60% and specificity ranged from 92% to 100%; two studies that looked at a cut off of 2 or more found that sensitivity ranged from 14% to 38.9% and specificity ranged from 97% to 97.1%. SMAST (one study): SMAST performed poorly at a cut off of 2 or more, with a sensitivity of 48% and a specificity of 100%. Variations of AUDIT (two studies): AUDIT at a cut-off of 8 or more showed a sensitivity of 66.7% and a specificity of 95.3%; AUDIT C at a cut-off of 3 or more showed a sensitivity of 100% and a specificity of 80.7%. ARPS and shARPS in comparison to AUDIT and SMAST-G (one study): the study did not report the cut-off for ARPS and shARPS. Sensitivity was 93% (ARPS) and 92% (shARPS) compared to 28% for the AUDIT and 52% for the SMAST-G. Specificity was not so good at 63% and 51% for the ARPS and shARPS compared with 100% and 96% for the AUDIT and SMAST G. **Authors' conclusions** The Alcohol Use Disorders Identification Test (AUDIT) was a useful screen for detecting harmful and hazardous drinking in the elderly and the CAGE test was valuable when screening for dependence. 1.2**. Bradley KA** , Boyd-Wickizer J, Powell SH, et al. Alcohol screening questionnaires in women: a critical review. JAMA. 1998 Jul 8; 280(2):166-	**Berks** J, McCormick R. Screening for alcohol misuse in elderly primary care patients: a **systematic literature review**. Int Psychogeriatr. 2008 Dec; 20(6):1090-103. PMID: 18538045.

71. PMID: 9669791. **Population:** Primary care and OB, mostly women **Number of Studies Included : 9** **Total Number of Patients:** Total:10,865 a Women: 10,522 a **List of Screening Instruments Included :** CAGE, TWEAK, AUDIT, T-ACE **Alcohol Misuse** Heavy drinking Alcohol abuse or dependence **Quality Rating : fair** **Tulemused:** The CAGE, using the traditional cut point of 2 or more resulted in low sensitivities (38%-50%) in predominantly white female populations. The TWEAK and Alcohol Use Disorders Identification Test (AUDIT) had sensitivities less than 80% at traditional cut points. The TWEAK and T-ACE questionnaires had higher AUROCs (0.84-0.87) than the CAGE questionnaire (0.76-0.78) for detecting heavy drinking before pregnancy was recognized in black obstetric patients. The CAGE questionnaire was relatively insensitive in predominantly white female populations. The TWEAK and AUDIT questionnaires have performed adequately in black or white women, using lower cut points than usual 3. **Burns E,** Gray R, Smith LA. Brief screening questionnaires to identify problem drinking during pregnancy: a systematic review. Addiction. 2010 Apr; 105(4):601-14. PMID: 20403013 **Population** Pregnant women **Number of Studies Included : 5** **Total Number of Patients:** 6,724 **List of Screening Instruments Included :** T-ACE, TWEAK AUDIT-C, AUDIT, CAGE NET, SMAST **Alcohol Misuse** At-risk drinking Alcohol abuse or dependence **Quality Rating : fair** **Tekst:** Study quality was generally good, but lack of blinding was a common weakness. For risk drinking sensitivity was highest for T-ACE (69-88%), TWEAK (71-91%) and AUDIT-C (95%), with high specificity (71-89%, 73-83% and 85%, respectively). CAGE and SMAST performed poorly. Sensitivity of AUDIT-C at score >or=3 was high for past year	

alcohol dependence (100%) or alcohol use disorder (96%) with moderate specificity (71% each). For life-time alcohol dependency the AUDIT at score >or=8 performed poorly. T-ACE, TWEAK and AUDIT-C show promise for screening for risk drinking, and AUDIT-C may also be useful for identifying alcohol dependency or abuse 4. **Fiellin DA**, Reid MC, O'Connor PG. Screening for alcohol problems in primary care: a systematic review. Arch Intern Med. 2000 Jul 10; 160(13):1977-89. PMID: 10888972. **Population** Primary care, adults **Number of Studies Included : 38** **Total Number of Patients: ???** **List of Screening Instruments Included :** AUDIT, CAGE SMAST, single question, QF **Alcohol Misuse** At-risk/ hazardous drinking Alcohol abuse or dependence **Quality Rating : fair** 5. **Berner MM**, Kriston L, Bentele M, et al. The alcohol use disorders identification test for detecting at-risk drinking: a systematic review and meta-analysis. J Stud Alcohol Drugs. 2007 May; 68(3):461-73. PMID: 17446987. **Population** Primary care, adults, college students, older adults **Number of Studies Included :** 13 PC 1 college health **Total Number of Patients:** 22,195 a **List of Screening Instruments Included : AUDIT** **Alcohol Misuse** At-risk drinking **Quality Rating : Good** **Review Methods.** Two people independently selected, extracted data from, and rated the quality of relevant trials and systematic reviews. Quantitative analyses were conducted for outcomes when feasible and used subgroup analyses to explore whether results differed by intensity, sex, country, person delivering the counseling, or setting. Two reviewers graded the strength of evidence (SOE). A total of 23 trials and six systematic reviews were included. **Results:** **We found adequate evidence that several screening instruments can detect alcohol misuse in adults with acceptable sensitivity and**	**Burns E,** Gray R, Smith LA. Brief screening questionnaires to identify problem drinking during pregnancy: a systematic review. Addiction. 2010 Apr; 105(4):601-14. PMID: 20403013

specificity.

The AUDIT had sensitivity of 0.44 to 0.51 and specificity of 0.96 to 0.97 for identifying alcohol misuse in adults using a cut-point of ≥8; more optimal balance of sensitivity and specificity was seen at cutoffs of 4 or 5. The sensitivity and specificity at a cutoff of ≥4 were 0.84 to 0.85 and 0.77 to 0.84, respectively; and at a cutoff of ≥5 were 0.70 to 0.92 and 0.73 to 0.94, respectively. Further, sex-specific cutoffs may be warranted because sensitivities for women at cutoffs of ≥4 and ≥5 were 0.47 to 0.65 and 0.35 to 0.53, respectively, but improved to 0.70 to 0.79 at ≥3 (with specificity of 0.86 to 0.87).The CAGE has very low sensitivity for detecting risky/hazardous drinking and is therefore not a good screening test for identifying risky/hazardous drinking or for screening for the full spectrum of alcohol misuse.

For young adults and college students, the included systematic reviews identified only one study reporting the sensitivity and specificity of a screening instrument, the full AUDIT (≥8), which had a sensitivity of 0.82 and specificity of 0.78.

For pregnant women, the AUDIT-C performed better than other instruments for detecting both risky drinking and abuse or dependence, demonstrating both high sensitivity (0.95 or higher) and high specificity (up to 0.85).

The reference standard for the screening instruments was a structured diagnostic interview, generally including the timeline followback method or similar approaches to determine the quantity/frequency of consumption.

<u>Full spectrum alcohol misuse</u>

- **Single-question screens** covering the past 12 months have reported sensitivities of 0.82 to 0.87 and specificities of 0.61 to 0.79 for detecting alcohol misuse in adults in primary care.17, 58 ("How many times in the past year have you had X or more drinks in a day?" (X = 5 for men and 4 for women). A positive response to this single-question screen was defined as one or more.All adults: 0.82 to 0.87 0.61 to 0.79

When focusing on adequately sized U.S. studies that reported sensitivity and specificity of screening for the full spectrum of alcohol misuse in primary care, data suggest that some often recommended cut-points for screening (i.e., AUDIT≥8) may need to be revised.

- **AUDIT** had sensitivity of 0.44 to 0.51 and specificity of 0.96 to 0.97 for identifying alcohol misuse in adults using a cut-point of ≥8;

- **AUDIT-C**

<u>All adults</u>

AUDIT-C >2 0.96; 0.32
AUDIT-C >3 0.74 to 0.88
0.64 to 0.83
AUDIT-C >4 0.74 to 0.76
0.80 to 0.83
AUDIT-C >5 0.63; 0.92

<u>Dependence</u>

AUDIT>=8 0.61 to 0.96; 0.85 to 0.96 AUDIT C>=3 0.90; 0.45 CAGE>=2 0.77 to 0.94; 0.79 to 0.97 QF> 20 dr/wk 0.20; 0.97	
NICE 2010b	
Mean (SD) score on AUDIT = 3.6 (SD=3.2, range 0 to 28). Corresponding values (with SD and range reported) as follows: AUDIT-C = 3.0 (1.8, 0 to 10), Five-shot = 1.4 (0.9, 0 to 6.5), AUDIT-PC = 2.5 (1.7, 0 to 15), AUDIT-3 = 0.6 (0.8, 0 to 3), AUDIT-QF = 2.3 (1.2, 0 to 7) and CAGE = 0.4 (0.8, 0 to 4). Optimal combinations of sensitivity and specificity: AUDIT using a cut-off score of ≥6, for AUDIT-C with cut-off of ≥5, for Five-shot using a cut-off of ≥2, for AUDIT-PC with a cut-off of ≥4 and for AUDIT-QF using a cut-off of ≥4. Using these cut-offs, sensitivities of the tools ranged from 84% to 93%, whilst specificities were in the range of 83% to 90%. AuROC values were similarly high for AUDIT, AUDIT-C, 5-shot, AUDIT-PC and AUDIT-QF. Values were lower for AUDIT-3 and for CAGE.	**Aalto *et al.,* 2006** (Cross-sectional diagnostic evaluation, ++) Finland :
Significant correlation between alcohol consumption and score on AUDIT (Pearson's correlation coefficient r=0.74) and measures of GGT (r=0.20) and %CDT (r=0.36) but not aspartate aminotranferase (r=0.08) or erythrocyte mean cell volume (r=0.02). AUDIT higher sensitivity, specificity and positive predictive value than all of biochemical markers for hazardous consumption (69%, 98% and 95%), weekly binge consumption (75%, 90% and 71%), monthly binge consumption (66%, 97% and 91%) and alcohol dependence (84%, 83% and 41%). Of the biomarkers, only CDT yielded an acceptable AuROC value of 0.70, whilst the observed value in the region of 0.50 observed for aspartate aminotransferase highlights the poor performance of this tool in screening for alcohol misuse in this population. For the identification of alcohol dependence, AUDIT sensitivity was highest at 84%, but specificity lowest at 83%, with a PPV of only 41% and a NPV of 97%.	**Coulton *et al.,* 2006** (Cross-sectional diagnostic evaluation, ++) UK
Sensitivity of CAGE low in psychiatric populations (38.9% for problem drinking at a cut-off of 1, Philpot *et al.,* 2003) and emergency admissions to hospital (13% and 98% for alcohol dependence at a cut-off of 2 in emergency admissions to hospital, Luttrell *et al.,* 1997). One study described good screening properties for MAST: sensitivity of 91.4% and specificity of 83.9% in a population with a high prevalence of alcohol abuse and dependence. AUDIT relatively insensitive in a number of studies (33% to 79%), but with good specificity (86% to 100%) for alcohol misuse. AUDIT-5 performed more effectively than AUDIT and CAGE in community dwelling older people referred to a psychiatry service (Philpot *et al.,* 2003). ARPS and shARPS had high sensitivity (93% and 91%) and only moderate specificity (66% for each tool) among internal medicine clinic patients (Moore *et al.,* 2002b).	**O'Connell *et al.,* 2004** (Systematic review, +)
CAGE (97%), MAST (100% sensitivity), and the Severity of Alcohol Dependence Questionnaire (77%) were observed to be more sensitive than the laboratory markers measured. Using standard thresholds, laboratory markers yielded low sensitivities, even among subjects who reported drinking over 80g alcohol daily for at least 3 weeks immediately prior to study. Of the alcohol markers, CDT was seen to be most sensitive (31%), followed by MCV (14%) and GGT (11%).	**Bisson & Milford-Ward,** 1994 (Cross-sectional diagnostic evaluation, ++) UK

Full version of AUDIT effective in identifying binging drinkers using a threshold of ≥8 or ≥7. Optimal cut-off score for AUDIT-C = ≥6 and ≥2 for AUDIT-3. The AuROC among all risky drinkers (binging moderate and binging heavy and non-binging heavy drinkers) for AUDIT = 0.824 (95%CI 0.789 to 0.859), for AUDIT-C 0.829 (95%CI 0.795 to 0.864), and for AUDIT-3 0.779 (95%CI 0.739 to 0.818). AuROC values among binging moderate drinkers for AUDIT = 0.809 (95%CI 0.769 to 0.848), for AUDIT-C 0.816 (95%CI 0.777 to 0.854) and for AUDIT-3 0.756 (95%CI 0.712 to 0.8000). Use of the AUDIT cut-offs of ≥8 for bingeing moderate drinkers: sensitivity of 60% and specificity 81%; whilst the use of a threshold of ≥7 or more gave a sensitivity of 73% and specificity of 76% in this group. AUDIT-C cut-off ≥6: sensitivity of 70% and specificity of 77%. AUDIT-3 cut-off of ≥2 = sensitivity of 70% and specificity of 73%. Among binging heavy drinkers, the AuROC value for AUDIT =0.814 (95%CI 0.770 to 0.859), for AUDIT-C 0.817 (95%CI 0.773 to 0.861) and for AUDIT-3 0.767 (95%CI 0.718 to 0.816). Using the typically recommended AUDIT cut-off of 8 or more = 65% sensitivity and 81% specificity 81%; 7 or more = sensitivity of 72% and specificity of 76%. AUDIT-C threshold of ≥6 and over = sensitivity of 72% and specificity of 77%. AUDIT-3 cut-off of ≥2 and over = sensitivity of 72% and 73% specificity. Both cutoffs of ≥7 and ≥8 for the full AUDIT were relatively effective in identifying all risky drinkers and binging moderate drinkers and binging heavy drinkers separately. Thus, the short forms of AUDIT were seen to perform effectively in comparison with the full version of AUDIT.	**Tuunanen *et al.,*** (Cross-sectional diagnostic evaluation, ++) Finland
Past year prevalence of alcohol abuse or dependence = 8.9% (178/1992) (138 male and 45 female). The screening properties of measures in male patients (n=971) for alcohol abuse or dependence were reported. At cut-off scores of ≥5 for AUDIT and AUDIT-C sensitivities were 82% and 78% and specificities 73% and 75% respectively. At the recommended AUDIT cut-off of ≥8, screening properties were found to be poor among men. At the recommended cutoff score of ≥2.5, Five-shot was reported to have a sensitivity of 74% and a specificity of 81%. AUDIT-PC had a lower sensitivity (68%) but higher specificity (84%) in this group. At a cut-off of ≥5 and over, positive predictive values (PPV) were low for AUDIT (32%) and AUDIT-C (32.8%) but higher for AUDIT-PC (40%, cut off ≥5) and for Five-shot (38%, cut-off ≥2.5 and over). Negative predictive values (NPV) of these tests were found to be above 90%. The screening properties of all investigated laboratory tests were found to be poor. Among males, AuROC values for AUDIT and derived versions of the AUDIT were similar (AUDIT = 0.85, AUDIT-C = 0.83), Five-shot = 0.84 and AUDIT-P = 0.83), demonstrating similar effectiveness as screening tools. Laboratory tests resulted in AuROC values from 0.57 (GGT) to 0.66 (CDT), such lower values indicating weaker performance. The screening properties of instruments in female patients (n=1021) were also described. CAGE performed more poorly in females than males, with a sensitivity of only 54% at a cut-off of ≥1. A sensitivity of 65% and a specificity of 92% were reported for AUDIT (at a cut-off of ≥5). AUDIT-C performed less effectively in women than men (at a cut-off of ≥5), with a sensitivity of only 50% and a specificity of 93%. The sensitivity of Five-shot (at a cut-off score of ≥2.5) was slightly higher at 63%, with a similarly higher specificity of 95%. All questionnaires yielded very low PPV values but very high NPV values (over 96%). For all questionnaires and cut-offs examined, odds ratios were above 10 and higher at higher cutoffs. No laboratory test was judged to be appropriate for screening for alcohol abuse or dependence in this group. Only CDT confirmed the diagnosis at a recommended cut-off of ≥6. The Five-shot questionnaire performed most effectively in women, with an AuROC value of 0.88 (95%CI 0.86 to 0.90). The AuROC for CAGE in	**Aertgeerts *et al.,* 2001** (Cross-sectional diagnostic evaluation ++) Belgium

women was lower at 0.76, 95%CI 0.73 to 0.79) but better for AUDIT (0.87, 95%CI 0.85 to 0.89). Optimal cut-off scores were lower for female than males. AUDIT-C performed less well than AUDIT and Five-shot in females, with an AuROC value of 0.82 (95%CI 0.80 to 0.85). No significant differences between the performances of either GGT and MCV compared with CDT were found among women.	
Frank *et al.* (2008) evaluated the validity of the AUDIT-C questionnaire among White, African American and Hispanic adult primary care patients in the USA. AUDIT-C was observed to perform effectively in all 3 ethnic groups. At the recommended threshold scores, there were significant differences in sensitivity but not specificity across the 3 groups. Outpatients aged 18 yrs and above (n=1292) attending a family practice clinic in Texas, USA participated in the study. The study sample had a mean age of 43 yrs and was 70% female. AUDIT-C and CAGE were evaluated.. The main comparison standard was for alcohol misuse (risky drinking, alcohol abuse) defined as meeting criteria for either DSM-IV alcohol use disorder or risky drinking defined as drinking above recommended limits according to the National Institute on Alcohol Abuse and Alcoholism (NIAAA).. At previously recommended cutoff points there were statistically significant differences by race in AUDIT-C sensitivities but not specificities. *Screening for risky drinking and alcohol use disorders (alcohol misuse)* In women, AUDIT-C sensitivity was significantly higher in Hispanic (85%) than African American (67%, P=0.03) or White (70%, *Screening for alcohol use disorders* AUDIT-C was also effective in screening for alcohol use disorders in all 3 groups, although sensitivity varied across groups. In each ethnic group, AUDIT-C had a higher AuROC than CAGE (range 0.67 to 0.88) for detecting alcohol use disorders (P<0.05 for each comparison, bar Hispanic women (P=0.07)). CAGE had a relatively low sensitivity for alcohol use disorders (23% to 72%).	**Frank *et al.* (2008)** (Cross-sectional diagnostic evaluation, ++) USA
To systematically review the evidence published in English for the effectiveness of the CAGE questionnaire across different patient populations in the identification of alcohol-related problems CAGE had high test-retest reliability (0.80 to 0.95) and adequate correlations (0.48 to 0.70) with other screening instruments. CAGE was valid tool for the identification of alcohol abuse and dependence in medical and surgical inpatients, ambulatory medical patients and psychiatric inpatients (average sensitivity 71%, specificity 90%). Optimal cut-offs = ≥1 or ≥2. Performance in primary care patients varied, and CAGE did not appear to perform well in white women, prenatal women and college students. CAGE was not an appropriate screening test for less severe forms of drinking. Sensitivity: CAGE (≥ 1) 97% , MAST (≥ 4) 100% Severity of Alcohol Dependence Questionnaire (≥ 11) (77%) CDT (pos) 31% GGT (>48) 11% MCV (>96) 14%	**Bisson & Milford-Ward 1994** UK Cross-sectional diagnostic evaluation, ++
n=150 recruited from drug treatment (n-50) and primary health care (n=100) settings Mean age 31.3 yrs (SD=8.4) 50% male 61% unemployed, 95% Caucasian, 12 yrs mean education (SD=2.8) Sensitivity: Alcohol Use vs abuse (at cut-off ≤ 4.5) = 71% Abuse vs dependence (at cut-off ≤ 10.5) = 86%	**Newcombe *et al.*, 2005** Cross-sectional diagnostic evaluation,

Specifisity: Alcohol Use vs abuse (at cut-off ≤ 4.5) = 63% Abuse vs dependence (at cut-off ≤ 10.5) = 77% NPV: Alcohol Use vs abuse (at cut-off ≤ 4.5) = 0.76 Abuse vs dependence (at cut-off ≤ 10.5) = 0.83	
n=1047 (697 from primary care, 350 from specialised settings) Mean age 30.4 yrs, SD=8.2 Sensitivity: Alcohol Use vs abuse (at cut-off ≤ 5.5) = 83% Abuse vs dependence (at cut-off ≤ 10.5) = 67% Specifisity: Alcohol Use vs abuse (at cut-off ≤ 5.5) = 79% Abuse vs dependence (at cut-off ≤ 10.5) = 60% NPV; Alcohol Use vs abuse (at cut-off ≤ 5.5) = 0.87 Abuse vs dependence(at cut-off ≤ 10.5) = 0.70	**Humeniuk *et al.,* 2008** Cross-sectional diagnostic evaluation
Patients aged less than 65 yrs (n=204), 74 women (mean age 43.7 yrs, SD=15.1), 130 men (mean age 43.1 yrs (SD=15.1) admitted to internal or surgical departments *Against ICD-10 diagnosis of abuse or dependence* CAGE (≥ 2) 49.1% MAST (≥ 5) 47.3% CDT (>26 mg/l females; > 20 mg/l males, as reported) 47.3% GGT (>19 U/l females; >28 U/l males) 57.6% MCV (≥ 95 fl) 33.3% *Harmful drinking* CAGE (≥ 2) 53.8% MAST (≥ 5) 50.0% CDT (>26 mg/l females; > 20 mg/l males, as reported) 53.8% GGT (>19 U/l females; >28 U/l males) 55.9% MCV (≥ 95 fl) 38.5% *Against ICD-10 diagnosis of abuse or dependence* MAST (≥ 5) 98.7% CDT (>26 mg/l females; > 20 mg/l males, as reported) 88.6% GGT (>19 U/l females; >28 U/l males) 69.5% MCV (≥ 95 fl) 88.4% *Harmful drinking* CAGE (≥ 2) 89.2% MAST (≥ 5) 89.9% CDT (>26 mg/l females; > 20 mg/l males, as reported) 82.4% GGT (>19 U/l females; >28 U/l males) 62.9% MCV (≥ 95 fl) 84.9% ***PPV*** *Against ICD-10 diagnosis of abuse or dependence* CAGE (≥ 2) 90.0% MAST (≥ 5) 92.9% CDT (>26 mg/l females; > 20 mg/l males, as reported) 60.5% GGT (>19 U/l females; >28 U/l males) 47.5%	**Wetterling *et al.,* 1998** Cross-sectional diagnostic evaluation

MCV (≥ 95 fl) 52.8% *Harmful drinking* CAGE (≥ 2) 46.7% MAST (≥ 5) 46.4% CDT (>26 mg/l females; > 20 mg/l males, as reported) 35.0% GGT (>19 U/l females; >28 U/l males) 26.8% MCV (≥ 95 fl) 31.3%	
The DSM-IV diagnoses generated by the fully structured lay-administered Composite International Diagnostic Interview Version 3.0 (CIDI 3.0) in the WHO World Mental Health (WMH) surveys were compared to diagnoses based on follow up interviews with the clinician-administered non-patient edition of the Structured Clinical Interview for DSM-IV (SCID). The area under the ROC curve (AUC, a measure of classifi cation accuracy that is not influenced by disorder prevalence) was 0.76 for the dichotomous classifi cation of having any of the lifetime DSM-IV anxiety, mood and substance disorders assessed in the surveys. The majority of SCID cases are detected by the CIDI (SN) for anxiety disorders (54.4%; 38.3–62.6%), major depression (55.3%), bipolar disorder (86.8%), substance dependence (73.6%) and any disorder (62.8%).	**Josep Maria Haro at al , 2006** Concordance of the Composite International Diagnostic Interview Version 3.0 (CIDI 3.0) with standardized clinical assessments in the WHO World Mental Health Surveys
M.I.N.I is a shot structured diagnostic interview developed jointly by psychiatrists and clinicians in United States and Europe for DSM-IV and ICD-10 psychiatric disorders. With an administration time of approximately 15 min it was designed to meet the need for a short but accurate structured psychiatric interview for multicenter clinical trials and epidemiology studies and to be used as a first step in outcome tracking in nonresearch clinical settings. Two parallel studies ware conducted to test the validity of M.I.N.I. diagnoses at two sites, The University of South Florida in Tampa and INSERM (National Institute of Mental Health) in Paris. These studies use a version of M.I.N.I that included several lifetime diagnoses that are now confined to the M.I.N.I Plus. Total of 636 subjects completed the two studies. The teo semples were evently distributed by gender. Mean ages were 44,8 years for the U.S site and 42,2 years for the French site.	**David V. Sheehan, M.D, M.B.A; Yves Lecrubier at al, 1998** The MINI International neuropsychiatric interview. The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10.
The WHO study on the reliability and validity of the alcohol and drug use disorder instruments is an international study wich has taken place in 12 centres in ten countries, aiming to test the reliability and validity of three diagnostic instruments for alcohol and drug use disorders: the Composite International Diagnostic Interview (CIDI), the Shedules for Clinical Assessment in Neuropsychiatry (SCAN) and a special version of the Alcohol Use Disorder and Associated Disabilities Interview scheduel alcohol/drug-revised (AUDADIS-ADR). The total number of cases included in the study was 1825, 12 studues, each centre contributing between 131 and 197 cases. The three instruments used in the study, SCAN, CIDI and AUDADIS-ADR prove to be instruments that yield reliable diagnosis for alcohol and drug dependence, but reliability was generally poor for corresponding harmful use and abuse diagnoses. These instruments provide basic information on the presence of the condition listed in the ICD-10 , DSM-IV as well asadditional information on their onset, recency and temporal clustering.	**B. Üstün at al, 1997** WHO Study on the reliability and validity of the alcohol and drug use disorder instruments: overview of methods and results.
This paper discusses the reliability of the Alcohol and Substance Abuse modules of the CIDI-Auto in two countries, Australia and Puerto Rico, and two languages, English and Spanish. CIDI-Auto is a computer-assisted version of the CIDI. Reliability estimates for DSM/ICD are presented at the diagnostic and symptom level. In total, 286 subjects, ages 17-60 years, who had at least 12 drinks of alcohol in their lifetime participated in the study. Adequate to good test-retest reliability estimates were obtained, with no major differences by nosology, site, substance, or time. Harmful use/abuse showed lower kappas than dependence. Reliability estimates for dependence ranged from 0.70 to 0.95. For harmful use, kappa's ranged from	**Rubio-Stipec M, Peters L, Andrews G., 1999** Test-Retest Reliability of the Computerized CIDI (CIDI-Auto): Substance Abuse Modules**.**

0.45 to 0.66. The findings are encouraging; CIDI-Auto produces reliable classification across two settings and in two languages with an instrument that has good coverage of different manifestations of the illness	
Psychiatric and substance use disorders co-occur frequently in the clinical (1) and general population (2–4). Understanding the relationship between substance use disorders and psychiatric disorders is necessary to clarify the etiology of the disorders and to improve treatment, but diagnostic issues have hindered this process. The diagnosis of psychiatric disorders among substance abusers is complicated by the resemblance of intoxication and withdrawal effects to the symptoms of psychiatric disorders. The challenge has been to design measures to differentiate three conditions: 1) expected intoxication and withdrawal symptoms, 2) psychiatric disorders occurring during periods of active substance use, and 3) psychiatric disorders that are clearly independent from substance use because they are temporally distinct from periods of substance use. To provide a diagnostic instrument that was reliable and valid for assessment of psychiatric disorders in substance abusers, the Psychiatric Research Interview for Substance and Mental Disorders (PRISM) (14) was developed Subjects were recruited from New York City treatment facilities. Of 342 eligible patients, 285 (83.33%) completed a test and a retest interview. Of these 285 patients, 54.04% (N=154) were male. About half (51.93%, N=148) were white, 31.58% (N=90) were African American, 12.28% (N=35) were Hispanic, and 2.21% (N=6) were of other ethnicities. The subjects' mean age was 36.28 years (SD=8.77), almost one-half (47.02%, N=134) were unemployed, 74.74% (N=213) had at least 12 years of education, and 13.70% (N=39) were married or cohabiting. We conducted a test-retest study of DSM-IV diagnoses in substance-abusing patients by using the PRISM-IV, a diagnostic instrument designed to improve reliability in such samples. In developing the instrument, we used fundamental principles of psychometrics, including the need for clear criteria and guidelines for rating symptoms and syndromes. The study had a rigorous test-retest design and a large demographically and clinically varied sample. The results indicate that many DSM-IV disorders can be diagnosed reliably with the PRISM-IV in substance abusers, including substance dependence, primary and substance-induced major depressive disorder, primary and substance-induced psychotic disorder, some primary anxiety disorders, antisocial personality disorder, and borderline personality disorder. Although reliability for substance dependence disorders was largely very good to excellent, reliability for DSM-IV substance abuse was lower, as was found previously.	**Deborah Hasin at al,** Diagnosis of Comorbid Psychiatric Disorders in Substance Users Assessed With the Psychiatric Research Interview for Substance and Mental Disorders for DSM-IV 2006