Additional Materials and Slide Deck for: Hanson, R. K., Reid, B., May, K., & Babchishin, K. M. (Aug, 2025). The predictive validity of age and recidivism risk tools for men with intellectual disability and a history of sexual offending: A meta-analysis. Paper presented at IATSO 2025. Poznań, Poland.

Table 1

Studies included in the meta-analysis

Study	Country	Source of recidivism information	Setting	Sample Size	Additional data provided
Baudin et al. (2021)	Sweden	Official	Institution	11	Yes
Blacker et al. (2011)	United Kingdom	Staff	Community	33	No
Callahan et al. (2024)	United States	Official	Institution	271	No
Delforterie et al. (2023)	Netherlands	Official	Institution	63	Yes
Federoff et al. (2016)	Canada	Staff	Community	51	Yes
Hanson et al. (2015)	Canada	Official	Community	38	Yes
Hanson et al. (2024)	Canada	Official	Institution	39	Yes
Lofthouse et al. (2013)	United Kingdom	Staff	Community	64	No
McGrath et al. (2012)	United States	Official	Community	18	Yes
Pouls and Jeandarme (2023)	Belgium	Staff	Institution	38	Yes
Sindall (2012)	United Kingdom	Staff	Combined	16	No
Sowden and Olver (2017)	Canada	Official	Institution	95	Yes
Stephens et al. (2018)	Canada	Official	Combined	78	No
Tough (2001)	Canada	Staff	Community	81	Yes
Wilcox et al. (2009)	United Kingdom	Official	Community	27	No

Notes. Official recidivism included arrests/charges and convictions.

Table 2

Prediction of Sexual Recidivism for Men with Intellectual Disability/Developmental Disability

Predictors	Fixed			Random		*k*(rec/*N*)	Studies
	***d* [95% CI]**	***Q***	***I*²**	***d* [95% CI]**	***PI***		
Age	**0.46 [0.22, 0.70]**	8.36 (p = .50)	0.0	**0.46 [0.22, 0.70]**	[0.22, 0.71]	10 (98/438)	1.1, 2.2, 4, 5.1, 6.1, 7.1, 8.2, 9.1, 10.1, 14.1
Actuarial for General Recidivism	**0.39 [0.14, 0.63]**	3.61 (p = .61)	0.0	**0.39 [0.14, 0.63]**	[0.14, 0.63]	6 (103/311)	1.1, 5.1, 6.1, 11, 12, 14.1
Any VRAG/R	**0.42 [0.073, 0.77]**	1.14 (p = .57)	0.0	**0.42 [0.073, 0.77]**	[0.073, 0.77]	3 (55/139)	1.1, 5.1, 12
VRAG	**0.46 [0.11, 0.81]**	1.05 (p = .59)	0.0	**0.46 [0.11, 0.81]**	[0.11, 0.81]	3 (55/139)	1.1, 5.1, 12
Actuarial for Sexual Recidivism	**0.54 [0.35, 0.73]**	11.04 (p = .53)	0.0	**0.54 [0.33, 0.74]**	[0.25, 0.84]	13 (148/775)	2.1, 3, 4, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 11, 12, 13.1, 14.1
Any Static-99/R	**0.57 [0.36, 0.77]**	7.53 (p = .75)	0.0	**0.57 [0.36, 0.77]**	[0.36, 0.77]	12 (128/724)	2.1, 3, 4, 5.1, 6.1, 7.1, 8.1, 9.1, 10.1, 12, 13.1, 14.1,
Static-99R	**0.49 [0.24, 0.74]**	5.15 (p = .74)	0.0	**0.49 [0.24, 0.74]**	[0.24, 0.74]	9 (85/545)	2.1, 4, 5.1, 6.1, 7.1, 9.1, 10.1, 13.1, 14.1
Static-99	**0.66 [0.36, 0.95]**	4.30 (p = .37)	7.0	**0.66 [0.34, 0.97]**	[0.14, 1.13]	5 (60/437)	3, 6.1, 8.1, 12, 13.1
RRASOR	**0.47 [0.13, 0.81]**	9.86 (p = .020)	69.6	0.44 [-0.19, 1.06]	[-0.77, 1.64]	4 (50/190)	3, 6.1, 8.1, 11
Without outlier 8.1	0.17 [-0.24, 0.58]	3.45 (p = .18)	42.0	0.18 [-0.37, 0.72]	[-0.63, 0.99]	3 (36/109)	3, 6.1, 11
Any Static-2002/R	**0.74 [0.26, 1.21]**	1.01 (p = .60)	0.0	**0.74 [0.26, 1.21]**	[0.26, 1.21]	3 (28/90)	5.1, 6.1, 7.1
Static-2002R	**0.74 [0.26, 1.21]**	1.03 (p = .60)	0.0	**0.74 [0.26, 1.21]**	[0.26, 1.21]	3 (28/90)	5.1, 6.1, 7.1
Mechanical	**1.13 [0.77, 1.48]**	12.56 (p = .014)	68.2	**1.09 [0.46, 1.71]**	[-0.18, 2.35]	5 (55/191)	4, 6.1, 10.1, 11, 12
Without outlier 12	**0.72 [0.29, 1.15]**	1.90 (p = .59)	0.0	**0.72 [0.29, 1.15]**	[0.29, 1.15]	4 (34/127)	4, 6.1, 10.1, 11
ARMIDILO-S	**1.22 [0.84, 1.60]**	10.79 (p = .013)	72.2	**1.21 [0.50, 1.93]**	[-0.15, 2.57]	4 (50/162)	4, 10.1, 11, 12
Without outliers 11 & 12	**1.09 [0.31, 1.87]**	0.66 (p = .42)	0.0	**1.09 [0.31, 1.87]**	[0.31, 1.87]	2 (9/54)	4, 10.1

Notes. Bolded value indicates statistical significance at $p < .05$. The observed number of recidivists is denoted by 'rec' in the *k*(rec/*N*) column. See Table A1 in Appendix for corresponding study authors.

Table 3

Prediction of Non-Sexual Violent, Any Violent, and Any Recidivism for Men with Intellectual Disability/Developmental Disability

Prediction Tools	Fixed-Effect			Random-Effects		*k*(rec/*N*)	Studies
	d [95% CI]	*Q*	I^2	*d* [95% CI]	*PI*		
Non-Sexual Violent							
Age	0.40 [-0.02, 0.82]	2.08 (p = .72)	0.0	0.40 [-0.015, 0.82]	[-0.015, 0.82]	5 (35/143)	5.1, 6.1, 7.1, 9.1, 10.1
Actuarial for General Recidivism	0.52 [-0.0087, 1.05]	0.49 (p = .78)	0.0	0.52 [-0.0087, 1.05]	[-0.0087, 1.05]	3 (19/116)	5.1, 6.1, 11
Actuarial for Sexual Recidivism	**0.45 [0.068, 0.83]**	1.01 (p = .96)	0.0	**0.45 [0.068, 0.83]**	[0.068, 0.83]	6 (40/182)	5.1, 6.1, 7.1, 9.1, 10.1, 11
Any Static-99/R	**0.49 [0.072, 0.90]**	0.77 (p = .94)	0.0	**0.49 [0.072, 0.90]**	[0.072, 0.90]	5 (35/143)	5.1, 6.1, 7.1, 9.1, 10.1
Static-99R	**0.48 [0.06, 0.89]**	0.76 (p = .94)	0.0	**0.48 [0.06, 0.89]**	[0.06, 0.89]	5 (35/143)	5.1, 6.1, 7.1, 9.1, 10.1
Any Static-2002/R	0.30 [-0.28, 0.88]	0.51 (p = .78)	0.0	0.30 [-0.28, 0.88]	[-0.28, 0.88]	3 (16/90)	5.1, 6.1, 7.1
Static-2002R	0.28 [-0.30, 0.87]	0.33 (p = .85)	0.0	0.28 [-0.30, 0.87]	[-0.30, 0.87]	3 (16/90)	5.1, 6.1, 7.1
Mechanical	**0.98 [0.43, 1.49]**	0.41 (p = .81)	0.0	**0.98 [0.43, 1.49]**	[0.43, 1.49]	3 (22/111)	6.1, 10.1, 11
Any Violent							
Age	**0.66 [0.34, 0.97]**	8.49 (p = .13)	41.1	**0.63 [0.20, 1.06]**	[-0.18, 1.44]	6 (86/186)	1.1, 5.1, 6.1, 7.1, 9.1, 10.1
Actuarial for General Recidivism	**0.68 [0.28, 1.07]**	0.79 (p = .79)	0.0	**0.68 [0.28, 1.07]**	[0.28, 1.07]	3 (56/114)	1.1, 5.1, 6.1,
Actuarial for Sexual Recidivism	**0.66 [0.36, 0.95]**	3.51 (p = .62)	0.0	**0.66 [0.36, 0.95]**	[0.36, 0.95]	6 (85/220)	2.1, 5.1, 6.1, 7.1, 9.1, 10.1
Any Static-99/R	**0.67 [0.38, 0.96]**	3.31 (p = .65)	0.0	**0.67 [0.38, 0.96]**	[0.38, 0.96]	6 (85/221)	2.1, 5.1, 6.1, 7.1, 9.1, 10.1

Static-99R	**0.66 [0.37, 0.95]**	3.00 (p = .70)	0.0	**0.66 [0.37, 0.95]**	[0.37, 0.95]	6 (85/221)	2.1, 5.1, 6.1, 7.1, 9.1, 10.1
Any Static-2002/R	**0.87 [0.40, 1.33]**	1.54 (p = .46)	0.0	**0.87 [0.40, 1.33]**	[0.40, 1.33]	3 (38/90)	5.1, 6.1, 7.1
Static-2002R	**0.86 [0.40, 1.33]**	1.44 (p = .49)	0.0	**0.86 [0.40, 1.33]**	[0.40, 1.33]	3 (38/90)	5.1, 6.1, 7.1
Any Recidivism							
Age	**0.76 [0.41, 1.10]**	4.88 (p = 0.30)	18.0	**0.76 [0.32, 1.20]**	[0.075, 1.45]	5 (89/156)	1.1, 5.1, 6.1, 7.1, 9.1
Actuarial for General Recidivism	**0.61 [0.23, 0.98]**	1.15 (p = .56)	0.0	**0.61 [0.23, 0.98]**	[0.23, 0.98]	3 (67/122)	1.1, 5.1, 6.1,
Actuarial for Sexual Recidivism	**0.78 [0.34, 1.22]**	1.51 (p = .68)	0.0	**0.78 [0.34, 1.22]**	[0.34, 1.22]	4 (58/100)	5.1, 6.1, 7.1, 9.1
Any Static-99/R	**0.82 [0.39, 1.26]**	1.50 (p = .68)	0.0	**0.82 [0.39, 1.26]**	[0.39, 1.26]	4 (58/105)	5.1, 6.1, 7.1, 9.1
Static-99R	**0.83 [0.39, 1.26]**	1.51 (p = .68)	0.0	**0.83 [0.39, 1.26]**	[0.39, 1.26]	4 (58/105)	5.1, 6.1, 7.1, 9.1
Any Static-2002/R	**0.72 [0.26, 1.18]**	1.43 (p = .49)	0.0	**0.72 [0.26, 1.18]**	[0.26, 1.18]	3 (51/90)	5.1, 6.1, 7.1
Static-2002R	**0.72 [0.26, 1.18]**	1.43 (p = .49)	0.0	**0.72 [0.26, 1.18]**	[0.26, 1.18]	3 (51/90)	5.1, 6.1, 7.1

Notes. Bolded value indicates statistical significance at $p < 0.05$. PI = Prediction Interval. The observed number of recidivists is denoted by 'rec' in the k(rec/N) column. See Table A1 in Appendix for corresponding study authors.

Table 4

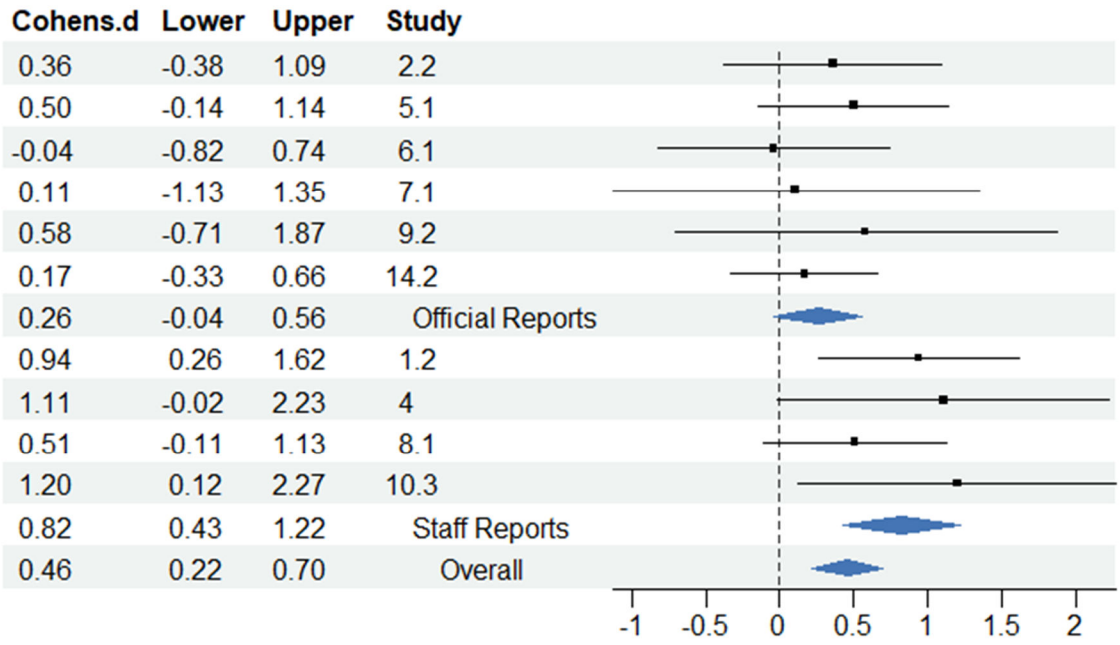
Moderator Analysis of Sexual Recidivism Effect Sizes by Report Type (Staff vs. Official).

Predictor	Fixed-Effect			Random-Effects		*k*(rec/*N*)
	***d* [95% CI]**	***Q***	***I²***	***d* [95% CI]**	***PI***	
Age						
Staff Reports	**0.82 [0.43, 1.22]**	1.79 (p = .62)	0.0	**0.82 [0.43, 1.22]**	[0.43, 1.22]	4 (38/167)
Official Reports	0.26 [-.040, 0.56]	1.60 (p = .90)	0.0	0.26 [-.040, 0.56]	[-.040, 0.56]	6 (60/271)
$Q_{between}$	**4.97** (p = .026)			**4.97** (p = .026)		
Actuarial for Sexual Recidivism						
Staff Reports	**0.68 [0.38, 0.99]**	5.88 (p = .21)	31.9	**0.70 [0.29, 1.1]**	[0.015, 1.38]	5 (64/243)
Official Reports	**0.44 [0.19, 0.69]**	3.71 (p = .81)	0.0	**0.44 [0.19, 0.69]**	[0.19, 0.69]	8 (84/532)
$Q_{between}$	= 1.46 (p = .23)			= 1.09 (p = .30)		
Static-99R						
Staff Reports	**0.91 [0.15, 1.68]**	0.22 (p = .64)	0.0	**0.91 [0.15, 1.68]**	[0.15, 1.68]	2 (9/54)
Official Reports	**0.44 [0.18, 0.71]**	3.64 (p = .73)	0.0	**0.44 [0.18, 0.71]**	[0.18, 0.71]	7 (76/491)
$Q_{between}$	= 1.29 (p = .26)			= 1.29 (p = .26)		

Notes. Official reports include arrests/charges or convictions. Bolded value indicates statistical significance at $p < 0.05$. PI = Prediction Interval. The observed number of recidivists is denoted by 'rec' in the *k*(rec/*N*) column.

Figure 1

Fixed-Effect Forest Plot for the Relationship Between Age and Sexual Recidivism



Note. Diamonds indicate fixed-effect weighted averages for official reports ($k = 6$), staff reports ($k = 4$) and overall ($k = 10$).

Appendix Table A1

Legend for Tables: Study ID Numbers

Study Number	Authors	Study Number	Authors
1.1	Curry (2016)[1]	8.1	Tough (2001)[1]
1.2	Fedoroff et al. (2016)	8.2	Tough (2001)
2.1	Stephens et al. (2018)	8.3	Harris & Tough (2004)
2.2	Stephens (2018)[1]	9.1	Baudin (2021)[1]
3	Wilcox et al. (2009)	9.2	Baudin et al. (2021)
4	Sindall (2012)	10.1	Pouls (2023)[1]
5.1	Hanson (2024)[1]	10.2	Pouls & Jeandarme (2022)
5.2	Hanson & Harris (2000)	10.3	Pouls & Jeandarme (2023)
5.3	Hanson et al. (2024)	11	Blacker et al. (2011)
5.4	Blais et al. (2024)	12	Lofthouse et al. (2013)
5.5	Aelick et al. (2020)	13.1	Callahan et al. (2024)[2]
6.1	Hanson (2024)[1]	13.2	Callahan et al. (2024)
6.2	Hanson et al. (2007)	14.1	Olver (2017)[1]
6.3	Hanson et al. (2015)	14.2	Sowden & Olver (2017)
6.4	Hanson et al. (2013)	15.1	Delforterie (2023)[1]
7.1	McGrath (2007)[1]	15.2	Delforterie et al. (2023)
7.2	McGrath et al. (2007)		
7.3	McGrath et al. (2012)		

[1] Unpublished raw data

[2] Supplemental materials to published article

The predictive validity of age and recidivism risk tools for men with intellectual disability and a history of sexual offending: A meta-analysis

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IATSO International Association for the Treatment of Sexual Offenders

2025 Conference, August 26 – 29

Poznań, Poland

1

Prof. Kelly Babchishin

Kelsey May

Benjamin Reid

Sexually Harmful Behaviours Research Lab

2

Risk Assessment Is Important

- Public Safety Measures
- Effective Correctional Interventions
  - Risk/Need/Responsivity RNR

3

Risk Tools for Crime and Violence Are Available And Widely Used

- Developed and validated on mixed groups
- Moderate predictive accuracy (discrimination)
- Validity for subgroups cannot be assumed
- Not all differences make a difference; what qualifies as a meaningful subgroup?
  - Distinctive risk factors
  - Distinctive outcome measure

4

Men with Intellectual Developmental Disorder (IDD)

DSM-5-TR

1. Low cognitive ability
- IQ < 70 (50 < 65 to 75) - mild
- 70 < IQ < 80 – borderline

2. Functional Impairment in one or more domain
- Conceptual, Social, Practical
  - e.g., unable to pay bills, easily manipulated, "black and white" thinking

ICD-11 - **Disorder of intellectual development - Mild**

2 – 3 SD below the mean (0.1 to 2.3 percentile) (IQ 55 to 70)

"*usually* associated with distress or impairment in personal, family, social, educational, occupational, or other important areas of functioning."

5

Men with IDD

- Overrepresented in the criminal justice system
  - In US Prisons: 4% to 14%
  - In the general population: 1% to 2%
- Overrepresented among those with a sex offence conviction
  - Index sexual offence (Swedish Forensic Assessment; Edberg et al., 2022)
    - 26.2% of IDD cases
    - 11.5% of non-IDD cases

6

Possible Explanations for Overrepresentation

- Increased detection
- Counterfeit defiance
- Poor/immature sexual self-regulation

7

Possibly Distinctive Risk and Protective Factors

- High levels of professional supervision
- Unlikely to be in intimate relationship
- Intellectually compatible with children
- Rarely meaningfully employed

8

Scope of Current Meta-Analysis

- Age (as single variable)
- Risk tools for sexual recidivism (e.g., Static-99R, RRASOR)
- Risk tools for violent recidivism (VRAG)
- Risk tools for general (any) recidivism (SIR)
- Specialized risk tools for IDD population (ARMIDILO-S; Boer et al., 2013)

9

Study Eligibility

- Men aged 18 or older with a sexual offence history and an intellectual disability,
- Prospective or pseudo-prospective studies,
- Recidivism defined by staff report or official records (e.g., convictions),
- Sufficient data to calculate Cohen's *d*, and
- At least 10 participants.

10

15 Studies Found (non-overlapping samples)

Risk tools: total sample of 2,581 (*k* = 15)

Age: total sample of 438 (*k* = 10)

Nine research teams (out of 15) provided previously unpublished data

Intellectual disability identified by:

- standardized testing (*k* = 5),
- testing and functional impairment (*k* = 7)
- unknown (*k* = 3)

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Methods

- Interrater reliability good to excellent:
  - 1.0 median ICC (range from .71 to 1.0)
  - 1.0 median kappa (range from .44 to 1.0)
  - 1.0 median percent agreement (87% to 100%)
- Average follow-up: 7.0 years (*SD* = 5.0)
- Base rate for sexual recidivism:
  - 17.8% - Official criminal justice records
  - 32.6% - Staff reports

12

Main Findings

Risk tools and age predicted sexual, violent, and general recidivism.

Moderate to large discrimination

(most *d* values were between .45 and .85)

13

Cohen's d – Standardized Mean Differences

	Cohen's d	**AUC**
No relationship	0.00	0.50
Small	0.20	0.56
Medium	0.50	0.64
Large	0.80	0.71

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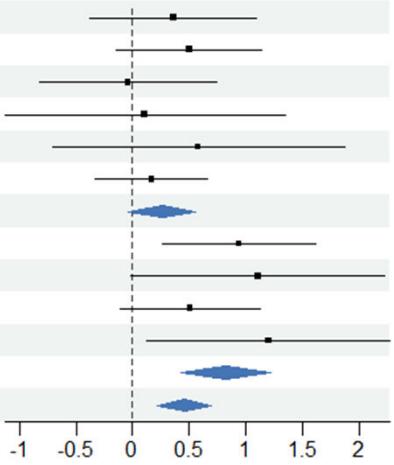
Age Predicted Sexual Recidivism

Cohens.d	Lower	Upper	Study
0.36	-0.38	1.09	2.2
0.50	-0.14	1.14	5.1
-0.04	-0.82	0.74	6.1
0.11	-1.13	1.35	7.1
0.58	-0.71	1.87	9.2
0.17	-0.33	0.66	14.2
0.26	-0.04	0.56	Official Reports
0.94	0.26	1.62	1.2
1.11	-0.02	2.23	4
0.51	-0.11	1.13	8.1
1.20	0.12	2.27	10.3
0.82	0.43	1.22	Staff Reports
0.46	0.22	0.70	Overall



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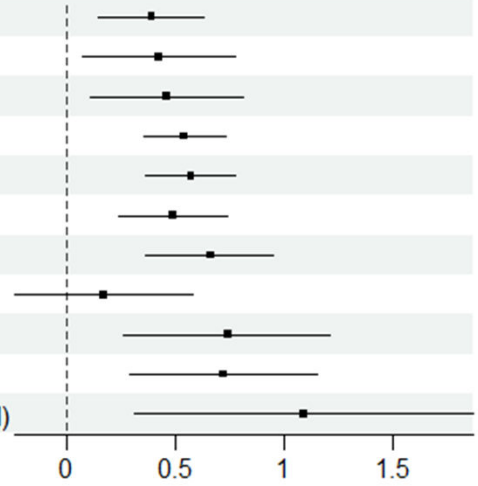
Risk Tools Predicted Sexual Recidivism

Cohens.d	Lower	Upper	Instrument
0.39	0.14	0.63	Actuarial for General
0.42	0.07	0.77	Any VRAG/R
0.46	0.11	0.81	VRAG
0.54	0.35	0.73	Actuarial for Sex
0.57	0.36	0.77	Any Static-99/R
0.49	0.24	0.74	Static-99R
0.66	0.36	0.95	Static-99
0.17	-0.24	0.58	RRASOR (outlier removed)
0.74	0.26	1.21	Static-2002R
0.72	0.29	1.15	Mechanical (outlier removed)
1.09	0.31	1.87	ARMIDILO-S (outliers removed)



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Biggest Effects for General Recidivism

Predictor	Type of Recidivism			
	Sex	Non-Sex Violence	Any Violence	Any
Age	0.46	0.40	0.66	0.76
Actuarial for General Recidivism	0.39	0.52	0.68	0.61
Actuarial For Sexual Recidivism	0.54	0.45	0.68	0.78
Static-99R	0.49	0.48	0.66	0.83

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Conclusion

- Standard risk tools for crime and violence work as intended for men with IDD and a history of sexual crime.
- For sexual recidivism, specific support for
  - Static-99R, Static-2002R, and ARMIDILO-S
- For case formulation
  - ARMIDILO-S (and combined with a static measure)
- Carefully consider age – it is a particularly important risk factor
- Privilege staff reports in recidivism studies

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Limitations

- More studies needed
- Confounding of risk tools and outcomes
- Calibration not examined

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