

EWDTS

European Workplace Drug Testing Society

European Guidelines for Workplace Drug Testing in **Blood and Blood Spots**

9th EWDTS Symposium in Lisbon

- Wim Schielen

www.ewdts.org

29-5-2015, Lisbon



- Current old versions of the guidelines:
 - Guidelines for Urine (2002)
 - Drug and Alcohol Testing in Hair, Collection and Analysis (2010)
 - Guidelines for Oral fluid (2011)
 - Specimen Collection Guidelines (2011)

- January 2014: chairs of the project were settled
 - Urine guideline (chair: Sanna Taskinen)
 - Oral fluid guideline (chair: Michaela Neuhofer)
 - Hair guideline (chair: Alberto Salomone)
 - **Blood/Blood Spots (chair: Wim Schielen)**
- The experts were chosen for the committee
- Meeting in Frankfurt 26th November, 2014
- Approval of the board: April, 2015, **except for Blood/Blood Spots**
- **DRAFT Version Guidelines Blood/Blood Spots due in Q3 2015**

Beck, Olof (Sweden)
Bosch, Tessa (Netherlands)
Böttcher, Michael (Germany)
Carmichael, Duncan (UK)
Fucci, Nadia (Italy)
George, Claire (UK)
Neuhofer, Michaela (Austria)
Piper, Mark (UK)
Salomone, Alberto (Italy)
Schielen, Wim (Netherlands)
Steinmeyer, Stefan (Germany)
Taskinen, Sanna (Finland)
Weinmann, Wolfgang (Switzerland)
Wilhelm, Lars (Germany)

1. General
 2. Definitions
 3. Collection
 4. Laboratory Organisation
 5. Laboratory Analysis Procedures
 6. Analytical Methods and Validation
 7. Quality Assurance and Quality Control
 8. Interpretation of Results
 9. Challenges to Drug Test Results
- Appendix A: Collection Procedure
 - Appendix B: Donor's statement of Informed Consent
 - Appendix C: Fatal flaws in the Chain of Custody
 - Appendix D: Cut-off values for Screening Tests
 - Appendix E: Cut-off values for Confirmation Tests
 - **Appendix F: Pre-analytical work up of whole-blood, plasma, serum and whole-blood blood spots**

Chapter 1: General	<ul style="list-style-type: none">• Requirement of accreditation (EN ISO/IEC 17025 and/or EN ISO 15189)• Guidelines are relevant to laboratory-based testing only
Chapter 2: Definitions	<ul style="list-style-type: none">• As much as possible Identical to make the guidelines more comparable. Extra definitions for blood-related issues.
Chapter 4: Laboratory Organisation	<ul style="list-style-type: none">• All personnel should adhere to the requirements of EN ISO/IEC 17025 and/or EN ISO 15189• Minimum key functions for accreditation• Descriptions of key functions are shortened

Chapter 6: Analytical Methods and Validation	Validation chapter added Long term frozen storage (-20 °C or below).
Chapter 7: Quality Assurance and Quality Control	Confirmation tests: New more detailed chapter about minimum requirements References:
Chapter 8: Interpretation of Results	Toxicology Review: Toxicologists right to interpret results: if local legislation allows Medical Review: removed to this chapter from appendix.

<p>Chapter 3: Collection</p>	<p>Blood: Well establish procedure. In Appendix A more about exceptional situations.</p>
<p>Appendix A Collection Procedure</p>	<p>Blood Collection Procedure</p> <ul style="list-style-type: none"> • Collection site requirements more in detail • Informing the donor about the test • Privacy: equal treatment of donors, observed collection in certain circumstances • Exceptional situations and instructions added
<p>Chapter 5: Laboratory Analysis Procedures</p>	<ul style="list-style-type: none"> • Chain of custody must be secured for all matrices • Reporting of preliminary presumptive positive results as local legislation allows. • If the first analysis is performed by a confirmation-level analysis (mass spectrometry), the positive findings have to be retested with another portion of the sample. <p>Blood validity testing:</p> <ul style="list-style-type: none"> • Invalid samples: how to report negative/positive results more in detail

Appendix B Example of a Donor's Statement of Informed Consent	Added: I confirm that I have received information about the meaning and content of the drug test.
Appendix C Some Examples of Fatal Flaws in the Chain of Custody	No changes

Appendix F Pre-analytical work up of whole-blood, plasma, serum and whole-blood blood spots	Suggested procedures for the work up of F1, whole-blood samples, fresh and frozen F2, plasma, fresh and frozen F3, serum, fresh and frozen F4, whole-blood spots
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APPENDIX D SCREENING CUT OFF ON MONDAY?

What was used Today/Yesterday, on Friday, last week, or last month?

Blood

Under the influence
of drugs - **Short**
detection window

Oral fluid

Short detection
window

Urine

Intermediate
detection window

Hair

Long detection
window



APPENDIX D BLOOD SCREENING CUT OFF VALUES ?



What was used Today/Yesterday

Blood - **Short** detection window, Core Panel / Optional / Under investigation

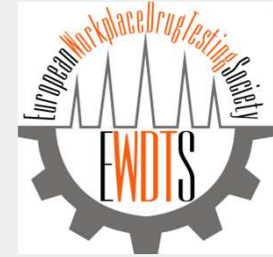
CORE PANEL	ng/mL
Amphetamine group	20-60
Cannabis (THC) + metabolites	10
Cocaine + metabolites	25-35
Opiates (Morphine)	10
6-AM	5
Methadone (I)	10-50
Benzodiazepines group	10

OPTIONAL	ng/mL
Buprenorphine	1-5
Propoxyphene or metabolites	20-40

Cut off under discussion e.g.

Pregabalin, Synthetic cannabinoids,
Synthetic cathinones (MDPV etc.),
Z-Drugs (Zopiclon, Zolpidem, Zaleplon)





APPENDIX E CONFIRMATION CUT OFF VALUES? What was used Today/Yesterday

Blood

Under the influence
of drugs - **Short**
detection window

Oral fluid

Short detection
window

Urine

Intermediate
detection window

Hair

Long detection
window



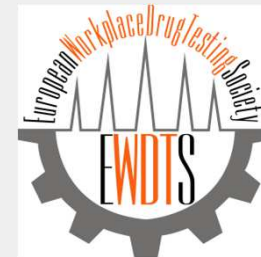
APPENDIX E BLOOD CONFIRMATION



AMPHETAMINES (should include but not limited to:)	ng/mL
Amphetamine (d+ l), Metamphetamine, MDA, MDMA	20-60
Other members of the amphetamine group	20-60
BENZODIAZEPINES (or metabolites) (should include but not limited to:)	ng/mL
Alprazolam, Bromazepam, Clonazepam, Diazepam, Flunitrazepam, Flurazepam, Lorazepam, Lormetazepam, Midazolam, Nitrazepam, Nordiazepam, Oxazepam, Phenazepam, Temazepam	10-20
OPIATES (should include but not limited to:)	ng/mL
Morphine, Codeine	10
6-Monoacetylmorphine	5
CANNABIS	ng/mL
Cannabis metabolite (THC-COOH)	1-5
COCAINE	
Benzoyllecgonine	50
METHADONE	
Methadone (d+l)	20
EDDP	-



NEXT STEPS



DRAFT Version Guidelines Blood/Blood Spots due in Q3 2015, for experts

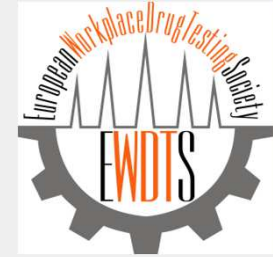
preFINAL Version Guidelines Blood/Blood Spots due in Q4 2015, for EWDTS Board

EWDTS Board approval in Q1 2016

- The guidelines will then be communicated within the members of EWDTS for feedback
- Please give comments on three levels:
 1. It would be better if you change... including change in the language.
 2. I strongly recommend this/these changes...
 3. If you do not change this/these. I think the guidelines are



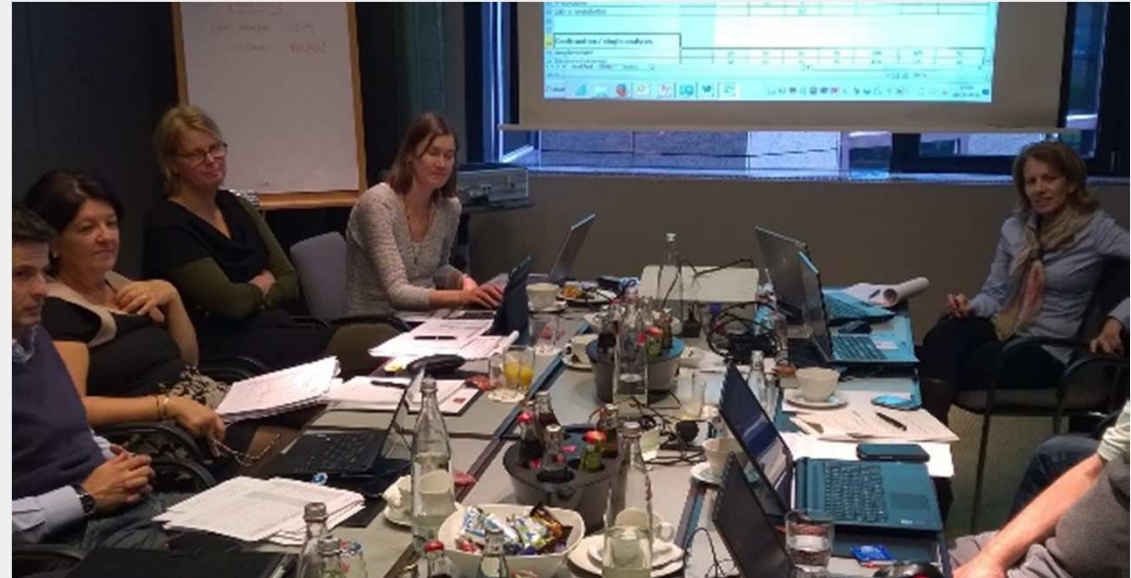
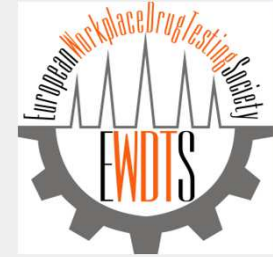
IN THE FUTURE



- The updating project will continue e.g.
 - Cut-off values
 - New substances
- New guidelines?
 - Guidelines for alcohol?
 - Guidelines for breath air?
 - Guidelines for MRO's?
 - Guidelines for POC-testing?



Thank you for your attention!



Guidelines committee meeting in Frankfurt
26th November, 2014

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Lisbon 2015

