wada

2022 Anti-Doping Testing Figures

EXECUTIVE SUMMARY

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This Executive Summary is intended to assist stakeholders in navigating the data outlined within the 2022 Testing Figures Report (2022 Report) and to highlight overall trends.

The 2022 Report summarizes the results of all the samples WADA-accredited Laboratories analyzed and reported into WADA's Anti-Doping Administration and Management System (ADAMS) in 2022. This is the second set of global testing figures under the version of the World Anti-Doping Code (Code) that came into effect in January 2021. The 2022 Report – which includes this Executive Summary and sub-reports by Laboratory, Sport, Testing Authority (TA) and Athlete Biological Passport (ABP) Blood Analysis – includes in- and out-of-competition urine samples; blood, dried blood spot (DBS) and ABP blood data; and the resulting Adverse Analytical Findings (AAFs) and Atypical Findings (ATFs).

The 2022 Testing Figures Report only focuses on Signatory anti-doping data that is reported into ADAMS and no longer includes data that is not reported into ADAMS.

REPORT HIGHLIGHTS

- Overall Samples: A 6.4% increase in the total number of samples (including urine, non-ABP blood and DBS samples) analyzed and reported into ADAMS in 2022 vs 2021.
- %AAF: An increase in the total percentage of AAFs: 0.65% in 2021 to 0.77% in 2022.
- Labs: An increase in the total number of samples analyzed and reported by most WADA-accredited laboratories and WADA-approved laboratories into ADAMS in 2022 vs 2021.
- Non-ABP Blood Samples: An increase in the total number and percentage of non-ABP blood and DBS samples analyzed in 2022.
- ABP blood Samples: An increase of 1.4% in the number of ABP blood samples analyzed in 2022.
- Tests: An increase in the total number of AAFs and %AAF for ERAs [including erythropoietin (EPO) and other EPO-receptor agonists], GHRFs and GC/C/IRMS tests in 2022.

USE OF ADAMS

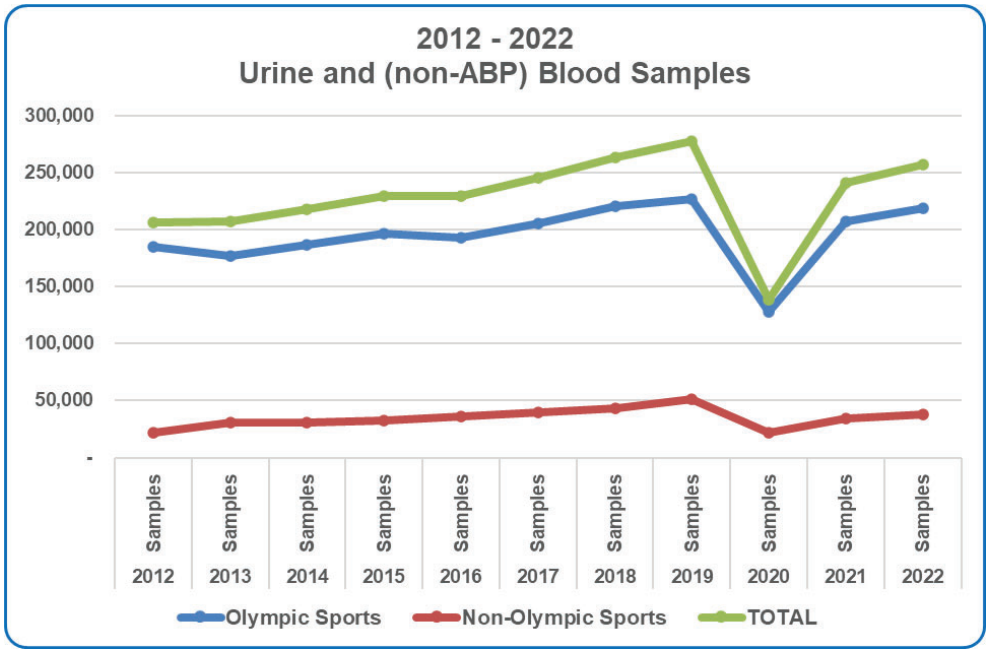
ADAMS continues to be a critical data-gathering tool for the anti-doping community.

The figures of urine, blood, dried blood spot (DBS) and ABP samples were compiled according to the 'Sample Collection Date' (and not the WADA-accredited Laboratory's 'Sample Reception Date'). The data was compiled using sample collection dates between 1 January and 31 December 2022.

In addition, in 2022, WADA adjusted Anti-Doping Organization (ADO) and Delegated Third Party (DTP) accounts to ensure the ADAMS account structure reflects the 2021 Code. Under the 2021 Code, only a Signatory can act as the Testing Authority (TA) or Results Management Authority (RMA). Therefore, changes were incorporated into the ADAMS reporting process to ensure that only laboratory results that fall under the World Anti-Doping Program (*e.g.*, only tests where a Signatory ADO is the Testing Authority) were reported in ADAMS. The results from laboratory testing of samples from non-signatories are no longer reported in ADAMS.

OVERALL FINDINGS

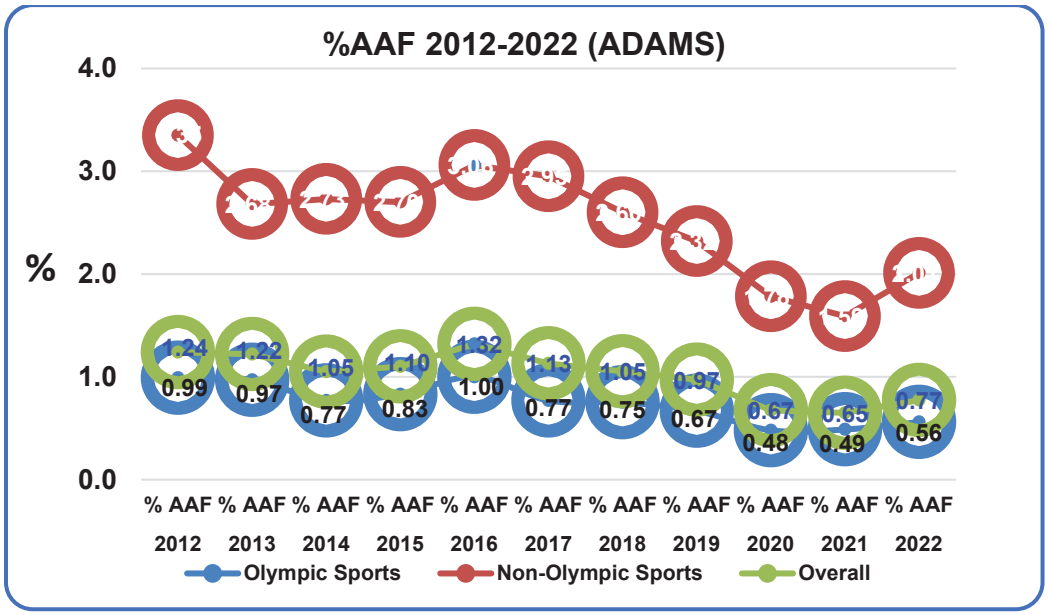
The 2022 data shows an increase of 6.4% in the number of overall samples analyzed from 241,430 in 2021 to 256,769 in 2022.



There was an increase in the percentage of total findings (AAFs and ATFs - combined) from 0.77% in 2021 to 0.93 in 2022.

In addition, the data shows an increase in the percentage of AAFs – more commonly known as positive tests – from 0.65% in 2021 to 0.77% in 2022.

In 2022, the proportion of ATFs reported (394 ATFs in 256,769 samples) increased relative to 2021 (312 ATFs in 241,430 samples).



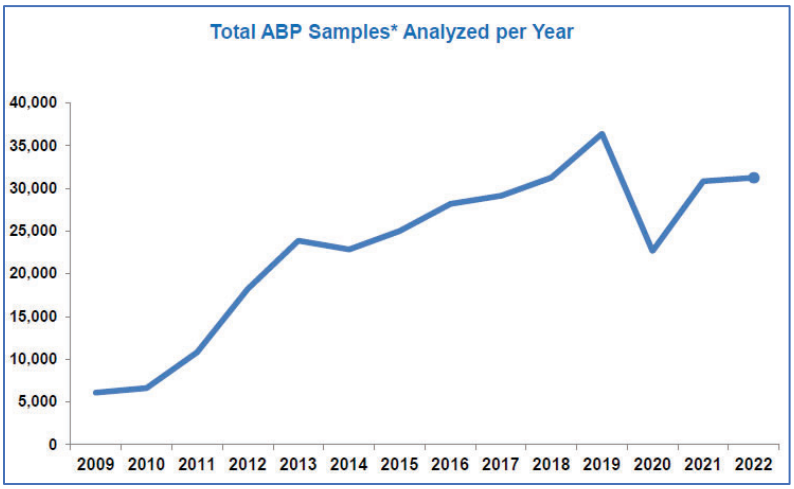
The results also show an increase in the number of (non-ABP) blood samples analyzed from 22,398 (blood + DBS samples) in 2021 to 25,456 (blood + DBS samples) in 2022.

IMPLEMENTATION OF ABP

Blood ABP

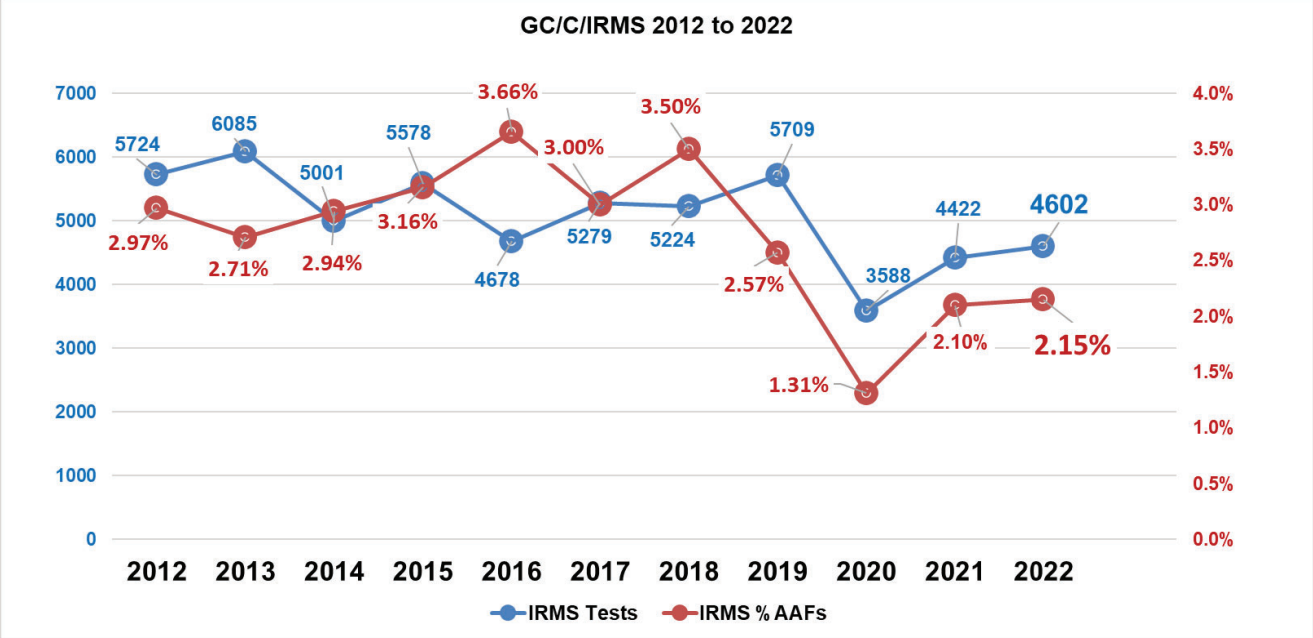
The number of International Federations (IFs) that included ABP blood testing was 25 in 2022 (compared to 26 in 2021) while the number of National Anti-Doping Organizations (NADOs) increased from 72 in 2021 to 78 in 2022.

The total number of ABP samples increased by 1.4% compared to 2021 (30,821 in 2021 to 31,246 in 2022).



Steroidal ABP

The gas chromatography combustion isotope ratio mass spectrometry (GC/C/IRMS) analytical method is an important test connected to the steroidal module of the ABP for urine samples. IRMS can be triggered by the ABP or requested by the Testing Authority (TA) based on other information. The number of AAFs and the % AAFs from the application of this method has increased compared to 2021 (93 in 2021 and 99 in 2022) while the number of tests has increased in 2022 by 4% (4,422 in 2021 versus 4,602). Based on the relative percentage of AAFs in comparison to other methods, the application of the GC/C/IRMS test continues, at 2.15% AAF, to be the analytical method with the highest proportion of AAFs.



COMPLIANCE WITH THE TDSSA

The 2022 Report marks the eighth year that Anti-Doping Organizations (ADOs) were required to incorporate the Technical Document for Sport Specific Analysis (TDSSA) into their testing programs. The TDSSA is intended to ensure that three groups of prohibited substances ((Erythropoietin Receptor Agonists (ERAs), Growth Hormone (GH) and GH Releasing Factors (GHRFs)), which are deemed to be at risk of abuse in certain sports/disciplines, are subject to an appropriate and consistent Minimum Level of Analysis by all ADOs.

From 2015 to 2022, there has been an overall increase in testing when compared to 2014 (the year prior to TDSSA implementation) including:

- An increase in the recording of TDSSA compliant sports/disciplines in ADAMS.
- A very slight decrease in total (urine and blood) ERAs analysis, an increase in total AAFs reported, and increase in percentage of ERA AAFs.
- An increase in total GH analysis between 2021 and 2022 and a decrease in the number of GH AAFs reported (7 cases in 2021, including one GH biomarker AAF, versus 5 cases in 2022).
- A decrease in GHRFs analysis between 2021 and 2022 but an increase in the number of AAFs.

Erythropoietin-Receptor Agonists (ERAs)

Year	ERAs Urine Tests	ERAs Blood Tests	AAFs Urine	AAFs Blood	AAFs Total	# of Sports	# of TAs
2022	**51,678**	**3,776**	**66**	**7**	**73**	**151**	**257**
2021	50,940	4,953	52	14	66	100	217
2020	35,963	1,845	29	3	32	102	197
2019	51,929	3,757	78	14	92	120	243
2018	47,955	4792	61	16	77	118	229
2017	44,322	4531	56	29	85	116	220
2016	43,246	3464	44	22	66	108	212
2015	32,999	3219	45	1	46	94	183

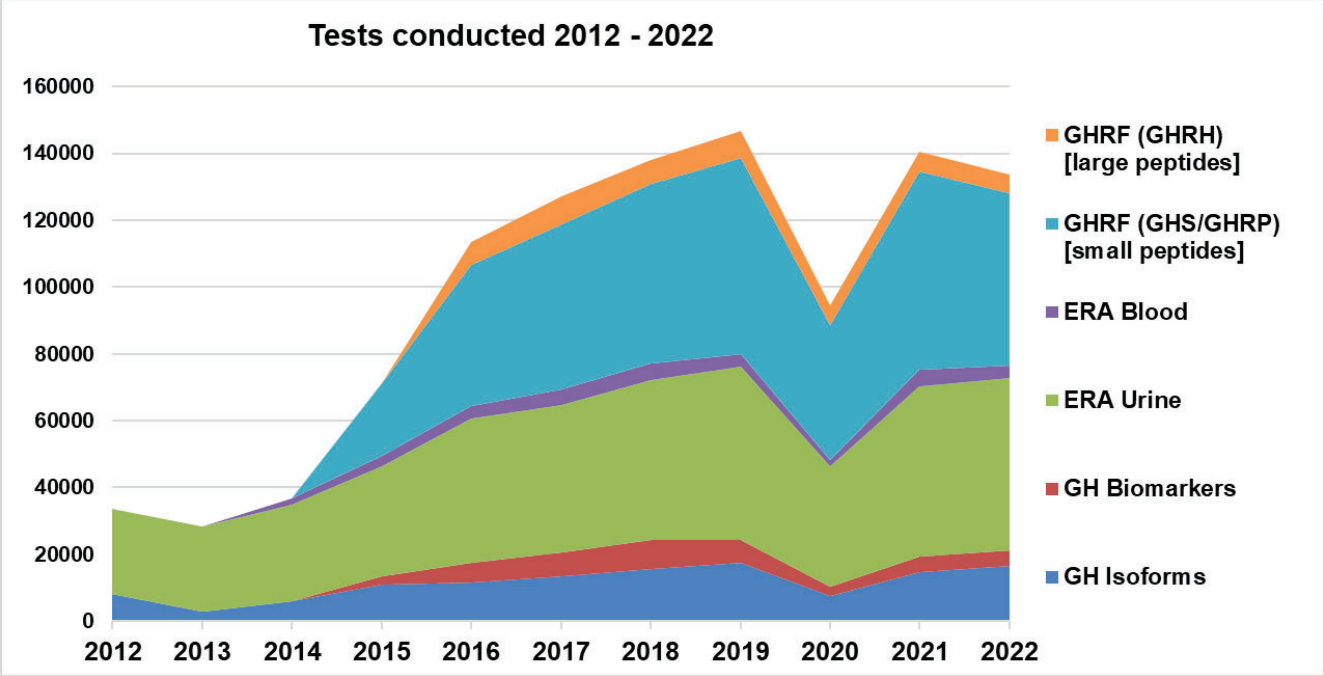
Growth Hormone (GH)

Year	GH Isoforms Tests	GH Biomarkers Tests	AAFs Total	# of Sports	# of TAs
2022	**16,680**	**4,500**	**5**	**119**	**144**
2021	14,734	4,720	7*	84	130
2020	7,509	2,855	1	82	114
2019	17,393	6,790	6	103	156
2018	15,487	8,755	2	99	137
2017	13,474	7,008	0	90	124
2016	11,555	5,983	6	68	111
2015	11,082	2,182	4	74	103

* 1 AAF from GH Biomarker Test

Growth Hormone Releasing Factors (GHRFs)

Year	GHRFs Urine Tests	AAFs Total	# of Sports	# of TAs
2022	**56,885**	**14**	**161**	**245**
2021	65,170	7	104	222
2020	46,341	13	102	199
2019	66,990	26	126	234
2018	60,964	21	124	231
2017	57,869	19	119	218
2016	42,730	15	111	207
2015	21,654	14	88	145



ADVERSE ANALYTICAL FINDINGS

The 2022 Report does not detail statistics on Anti-Doping Rule Violations (ADRVs). These results are included in a separate ADRVs Report, which details analytical and non-analytical cases and the outcomes of results management. The 2022 ADRVs Report will be published in 2024.

The figures include all analyses conducted in 2022 by the WADA-accredited Laboratories and by the WADA-approved Laboratories (approved by WADA to conduct blood analysis exclusively for the purposes of the ABP blood module).

In reading the 2022 Report, it is important to note that:

- One single result does not necessarily correspond to one athlete. Results may correspond to multiple findings regarding the same athlete or measurements performed on the same athlete, such as in the case of longitudinal studies of testosterone.
- The number of AAFs in the Report may not correspond with the number of ADRVs reported by ADOs. This is because all results are subject to a results management process conducted by ADOs, which includes matching results with Therapeutic Use Exemptions (TUEs) and/or longitudinal studies, which can result in no sanction.
- To help with the interpretation of the 2021 Report, a comprehensive Question and Answer document is available on WADA's website.

Table 1: Total Samples Analyzed (All Sports) *

A *Samples* Analyzed

Sport	Analyzed	*AAFs* [1]	(%)	*ATFs* [2]	(%)	*Total Findings* [3]	(%)
Olympic Sports [4]	218,774	1,222	0.56%	316	0.14%	1,538	0.70%
Non-Olympic Sports [5]	37,995	764	2.01%	78	0.21%	842	2.22%
TOTAL	**256,769**	**1,986**	0.77%	**394**	0.15%	**2,380**	0.93%

[1] The Adverse Analytical Findings (AAFs) in this report are not to be confused with adjudicated or sanctioned Anti-Doping Rule Violations (ADRVs). "Adverse Analytical Finding" is defined in the World Anti-Doping Code as "A report from a WADA-accredited Laboratory or other WADA-approved Laboratory that, consistent with the International Standard for Laboratories and related Technical Documents, identifies in a Sample the presence of a Prohibited Substance or its Metabolites or Markers (including elevated quantities of endogenous substances) or evidence of the use of a Prohibited Method." These figures may not be identical to sanctioned cases (number of ADRVs), as the figures given in this report may contain findings that underwent the Therapeutic Use Exemption (TUE) approval process for example.

[2] The Atypical Findings (ATFs) in this report are not to be confused with adjudicated or sanctioned Anti-Doping Rule Violations (ADRVs). "Atypical Finding" is defined in the World Anti-Doping Code as "A report from a WADA-accredited Laboratory or other WADA-approved Laboratory which requires further investigation as provided by the International Standard for Laboratories or related Technical Documents prior to the determination of an Adverse Analytical Finding." ATFs may correspond to multiple measurements performed on the same Athlete, such as in cases of longitudinal studies on testosterone.

[3] Includes AAFs and ATFs.

[4] Olympic sports in this table include sports reported into ADAMS and classified under ASOIF and AIOWF.

[5] Non-Olympic sports in this table includes sports reported into ADAMS and classified as ARISF, AIMS, IPC, Sports for Athletes with an Impairment, other Sports from Code Signatories and Other Sports.

* These figures do not include blood samples taken for the ABP. ABP Blood samples can be found in the 2022 Anti-Doping Testing Figures - Athlete Biological Passport (ABP) Report - Blood Analysis.

Table 2: Comparison of Years 2017 to 2022 - Olympic and Non-Olympic Figures reported in ADAMS

	2017 A *Samples* Analyzed	2018 A *Samples* Analyzed	2019 A *Samples* Analyzed	2020 A *Samples* Analyzed	2021 A *Samples* Analyzed	2022 A *Samples* Analyzed	2022 vs 2021 (% change)
Olympic Sports*	205,405	220,659	227,032	127,483	207,008	218,774	5.7%
Non-Olympic Sports**	39,827	42,860	51,015	22,275	34,422	37,995	10.4%
TOTAL	**245,232**	**263,519**	**278,047**	**149,758**	**241,430**	**256,769**	**6.4%**
	2017 AAFs	**2018 AAFs**	**2019 AAFs**	**2020 AAFs**	**2021 AAFs**	**2022 AAFs**	**2022 vs 2021 (% change)**
Olympic Sports*	1,575	1,659	1,519	612	1,013	1,222	20.6%
Non-Olympic Sports**	1,174	1,115	1,183	397	547	764	39.7%
TOTAL	**2,749**	**2,774**	**2,702**	**1,009**	**1,560**	**1,986**	**27.3%**
	2017 % AAFs	**2018 % AAFs**	**2019 % AAFs**	**2020 % AAFs**	**2021 % AAFs**	**2022 % AAFs**	**2022 vs 2021 (% change)**
Olympic Sports*	0.77	0.75	0.67	0.48	0.49	0.56	14.3%
Non-Olympic Sports**	2.95	2.60	2.32	1.78	1.59	2.01	26.4%
Overall	**1.12**	**1.05**	**0.97**	**0.67**	**0.65**	**0.77**	**19.7%**
	2017 % Total Findings	**2018 % Total Findings**	**2019 % Total Findings**	**2020 % Total Findings**	**2021 % Total Findings**	**2022 % Total Findings**	**2022 vs 2021 (% change)**
Olympic Sports*	0.82	0.82	0.79	0.61	0.60	0.70	16.7%
Non-Olympic Sports**	3.02	2.74	2.53	2.00	1.81	2.22	22.7%
Overall	**1.18**	**1.13**	**1.11**	**0.82**	**0.77**	**0.93**	**20.8%**

Table 3: Summary - Total Samples Analyzed (ADAMS)

	Samples	ATF	AAF
ADAMS Urine Total	231,313	381	1969
ADAMS Blood Total	22,708	13	13
ADAMS DBS Total	2,748	0	4
ABP Total [1]	31,246	0	0
	288,015	**394**	**1,986**

[1] ABP total in Table 3 also includes ABP samples analyzed by WADA-approved Laboratories in Nairobi (Kenya) and Cairo (Egypt) - please refer to the ABP Report.