
Expected Test Results

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Global Reference Intervals:

“Reference intervals are health-associated benchmarks essential for the interpretation of quantitative laboratory test results by medical practitioners. An interval is formally defined as a statistically derived range of values determined from a reference interval study encompassing the central 95% of values from a healthy reference population. Biomarker test results lying outside of the reference interval suggest an abnormal result and as such, establishing accurate reference intervals is crucial to informed clinical decision-making.”

Karbasy K, Ariadne P, Gaglione S, Nieuwesteeg M, Adeli K. Advances in Pediatric Reference Intervals for Biochemical Markers: Establishment of the Caliper Database in Healthy Children and Adolescents. Journal of Medical Biochemistry. 2015;34(1):23-30

ZIMS Global Reference Intervals:

ZIMS uses test result records entered by users around the world to calculate a global reference interval (**or expected test results**) for a specific combination of a test, sample type and species. When there is a larger amount of data, more specific reference intervals may be created, that also account for the subspecies, sex and/or the restraint method used during sampling. Millions of test results are processed and the end result of all these calculations is the ZIMS Expected Test Results resource, which has over 350,000 global reference intervals covering most of the common hematology and chemistry tests for over 1000 species. These global reference intervals provide essential diagnostic assistance to clinicians when they evaluate test results on their animals. The ZIMS data set currently grows by 5000-7000 test results *every day* and the global reference intervals are updated monthly to reflect the changing data set.

Details on [Local Reference Intervals and how to request this service](#).

Using the Expected Test Results

There have been updates to how data is displayed on the Test & Results preview pane, Test and Results Edit screen, Specified Test Report and Samples, Test and Results Reports. These updates represent the second phase of the global aggregated medical data project in ZIMS. The Expected Results global resource was funded by a grant from the Institute of Museum and Library Services (IMLS). This new resource offers enhanced analysis and filtering of test results and replaces the existing Physiological Values Reference Intervals. The Expected Results project complements the global medical resources (Drug Usage

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Extracts, Anesthesia Summaries, and Morbidity & Mortality Analysis) and was completed September 2017.

Expected Results column displays the Global Reference Intervals if there is a value available in the database for the taxonomy in context. It includes the minimum and maximum expected result, the Mean value for the population, Median value, N- the number of unique test results included in the analysis and Animals- the number of individual animals contributing results.

Test	Results	Expected Results (Based on Best Available Match) Type: Min- Max Mean [Median] N (Animals)
WBC [m]	8.5 *10 ³ cells/ μ L	Global sp RI: 2.03 - 22.46 9.38 [8.40] N=241 (159 animals)

It now includes a hyperlink to the global resource > Expected Test Results (Best available match for each test is determined by sex, restraint, and sample type of the animal. For more expected result data, please search the full resource)

Global sp RI: 31.0 - 58.1 43.0 [42.3] N=105 (26 animals)		~	No
Global sp RI: 10.4 - 19.0 13.6 [13.4] N=110 (26 animals)		~	No

Sample Quality

Sex: Male - Restraint: Chemical - Sample: Whole Blood - Age: All

There is also a question mark icon; if you hover-over with your mouse it will display sex, restraint method, sample type and age class for that Global RI. Please note that the reference interval is specific to each test and represents the best match for the animal in context. This means that comparing individuals of the same taxa may result in slightly different reference intervals, as the calculations are tailored to each patient.

If a value is out of range, the Evaluation will be in Red Text to draw attention to the potentially abnormal value

Test	Results	Expected Results (Based on Best Available Match) Type: Min- Max Mean [Median] N (Animals)	Evaluation
HGB [a]	20 g/dL	Global sp RI: 10.3 - 18.0 14.9 [15.3] N=77 (27 animals)	 High
HCT [m]	29 %	Global sp RI: 30.6 - 54.9 45.4 [47.0] N=82 (27 animals)	 Low

If a result does not have a global expected result as defined by the Test Dictionary, the Expected Result displays “Not Calculated”

Test	Results	Expected Results (Based on Best Available Match) Type: Min- Max Mean [Median] N (Animals)
McMaster	Other Result - {MYCOBACTERIA (ACID FAST RODS)}	Not calculated

If a numeric test does not have an RI calculation because there are not enough values in the database to meet criteria to calculate a global basic statistic, the Expected results display "Insufficient data".

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Test	Results	Expected Results (Based on Best Available Match) Type: Min- Max Mean [Median] N (Animals)
Total T4	1.1 µg/dL	Insufficient data

Search By Test

Taxonomy *:

Include Taxon Below

Test *:

Sample Type

Restraint Method

External Laboratory

Global
All animals in

Health Status

Sex Type

Sample Collecti

Testing Delay

If you want to compare your patient’s test results to the available raw data in the system, please use the Search by Test feature under Global medical resources > Test results > search by test.

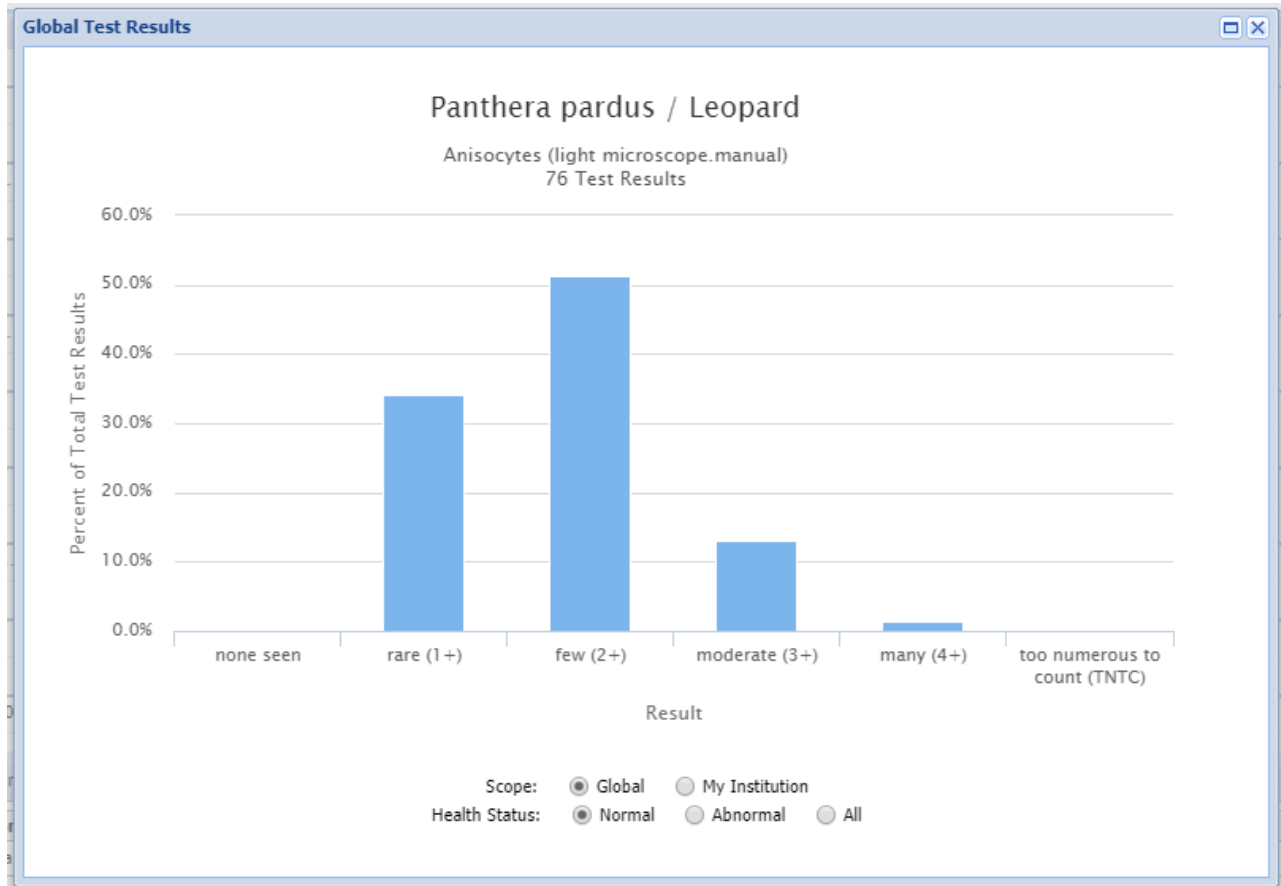
If a test does not have a RI data set available ZIMS will provide Basic Statistic: We do not have enough results to estimate the central 95% of the population results (a valid RI), but we have at least 15 values, so it displays the mean and median values.

Test	Results	Expected Results (Based on Best Available Match) Type: Min- Max Mean [Median] N (Animals)
HCT [m]	22 %	Basic Stats: N/A - N/A 22.1 [23.0] N=16 (13 animals)

For tests that use a data standard to record results it is not possible to calculate Expected Results. Instead, global and/or institutional values for that test, species & sample type combination are included as a histogram.

Test	Results	Expected Results (Based on Best Available Match) Type: Min- Max Mean [Median] N (Animals)
Anisocytosis	rare (1+)	View Global Results

Click on the View Global Results link to view the histogram. Select Scope & Health Status for additional filtering of results.



Related Documents:

- Click [here](#) for more information on the Expected Test Results.
- Creating [Samples](#)
- Recording [Tests and Results](#)
- FAQ on [Local Reference Intervals and how to request this service.](#)

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