TLS is a life-threatening oncologic emergency that occurs rapidly but may be preventable. Risk for developing TLS varies considerably based on tumor type and disease-, patient-, and treatment-specific factors.\textsuperscript{1}

This tool is only representative of a single publication; full TLS risk assessment should incorporate clinician judgment and consultation of clinical guidelines, product prescribing information, or other appropriate literature.
Using the TLS Risk Assessment Tool

This TLS Risk Assessment Tool is based on the findings of an international consensus panel of experts in pediatric and adult oncology, TLS pathophysiology, and TLS management. The panel conducted a review of literature published from 1966 to 2009 regarding the incidence and treatment of TLS. Recommendations were agreed upon using both evidence-based literature and expert opinion-based approaches.

In the diagram below, see the disease risk for each relevant patient characteristic. Please note that these do not represent all potential risk factors for the development of TLS.

**STEP ONE**

Take the disease risk from the diagram above and go to Step Two on the right.

**STEP TWO**

After you have determined your patient’s disease risk from Step One, choose the appropriate flow chart below to evaluate their overall risk for developing TLS.

**Responses from Step One**

**HRD**

- Renal dysfunction/involvement
  - OR
    - UA or PO$_4^{3-}$ or K$^+$ >ULN

**High risk**

**IRD**

- Normal renal function
  - AND
    - UA, PO$_4^{3-}$, K$^+$ all WNL

**Intermediate risk**

**LRD**

- Normal renal function
- Renal dysfunction/involvement

**Low risk**

Patients with high-risk disease (HRD) are at high risk for TLS when renal dysfunction and/or renal involvement is present.

Patients with intermediate-risk disease (IRD) are at intermediate risk for TLS when renal dysfunction and/or renal involvement is present or uric acid, phosphate, or potassium levels are elevated.

Patients with low-risk disease (LRD) are at intermediate risk for TLS when renal dysfunction and/or renal involvement is present.

**Note:**

HRD=high-risk disease; UA=uric acid; ULN=upper limit of normal; WNL=within normal limits.

*Always use your best clinical judgment when assessing individual patient scenarios.
Acute Leukemias

**STEP ONE**
In the diagram below, see the disease risk for each relevant patient characteristic. Please note that these do not represent all potential risk factors for the development of TLS.

- **Acute myeloid leukemia**
  - WBC ≥100 x 10⁹/L: HRD
  - WBC ≥25 x 10⁹/L and <100 x 10⁹/L: IRD
  - WBC <25 x 10⁹/L LDH ≥2x ULN: IRD
  - WBC <25 x 10⁹/L LDH <2x ULN: LRD

- **Acute lymphoblastic leukemia**
  - WBC ≥100 x 10⁹/L: HRD
  - WBC <100 x 10⁹/L LDH ≥2x ULN: HRD
  - WBC <100 x 10⁹/L LDH <2x ULN: IRD

Take the disease risk from the diagram above and go to Step Two on the right.

**STEP TWO**
After you have determined your patient’s disease risk from Step One, choose the appropriate flow chart below to evaluate their overall risk for developing TLS.1

- **LRD** (Low risk)
  - Normal renal function
  - Renal dysfunction/involvement

- **IRD** (Intermediate risk)
  - Normal renal function AND UA, PO₄³⁻, K⁺ all WNL
  - Renal dysfunction/involvement OR UA or PO₄³⁻ or K⁺ >ULN

- **HRD** (High risk)
  - Renal dysfunction/involvement OR UA or PO₄³⁻ or K⁺ >ULN

Patients with low-risk disease (LRD) are at intermediate risk for TLS when renal dysfunction and/or renal involvement is present.1

Patients with intermediate-risk disease (IRD) are at high risk for TLS when renal dysfunction and/or renal involvement is present or uric acid, phosphate, or potassium levels are elevated.1

Antihyperuricemic prophylaxis is recommended for patients at high or intermediate risk for TLS.1

HRD=high-risk disease; IRD=intermediate-risk disease; LDH=lactate dehydrogenase; LRD=low-risk disease; ULN=upper limit of normal; WBC=white blood cell.

*Always use your best clinical judgment when assessing individual patient scenarios.
In the diagram below, see the disease risk for each relevant patient characteristic. Please note that these do not represent all potential risk factors for the development of TLS.

**STEP ONE**

In the diagram below, see the disease risk for each relevant patient characteristic. Please note that these do not represent all potential risk factors for the development of TLS.

**STEP TWO**

After you have determined your patient’s disease risk from Step One, choose the appropriate flow chart below to evaluate their overall risk for developing TLS.1

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HRD=high-risk disease; IRD=intermediate-risk disease; LDH=lactate dehydrogenase; ULN=upper limit of normal.

*Always use your best clinical judgment when assessing individual patient scenarios.*
In the diagram below, see the disease risk for each relevant patient characteristic.

Please note that these do not represent all potential risk factors for the development of TLS.

**STEP ONE**

After you have determined your patient’s disease risk from Step One, choose the appropriate flow chart below to evaluate their overall risk for developing TLS.1*

**STEP TWO**

Patients with low-risk disease (LRD) are at intermediate risk for TLS when renal dysfunction and/or renal involvement is present.1

Patients with intermediate-risk disease (IRD) are at high risk for TLS when renal dysfunction and/or renal involvement is present or uric acid, phosphate, or potassium levels are elevated.1

Patients with high-risk disease (HRD) are at high risk for TLS when lactate dehydrogenase is elevated.1

Antihyperuricemic prophylaxis is recommended for patients at high or intermediate risk for TLS.1

*Always use your best clinical judgment when assessing individual patient scenarios.