# Wells' Criteria for DVT

## INPUTS

|  |  |
| --- | --- |
| Active cancer  *Treatment or palliation within 6 months* | **Options:**   * No (0) * Yes (1) |
| Bedridden recently >3 days or major surgery within 12 weeks | **Options:**   * No (0) * Yes (1) |
| Calf swelling >3 cm compared to the other leg  *Measured 10 cm below tibial tuberosity* | **Options:**   * No (0) * Yes (1) |
| Collateral (nonvaricose) superficial veins present | **Options:**   * No (0) * Yes (1) |
| Entire leg swollen | **Options:**   * No (0) * Yes (1) |
| Localized tenderness along the deep venous system | **Options:**   * No (0) * Yes (1) |
| Pitting edema, confined to symptomatic leg | **Options:**   * No (0) * Yes (1) |
| Paralysis, paresis, or recent plaster immobilization of the lower extremity | **Options:**   * No (0) * Yes (1) |
| Previously documented DVT | **Options:**   * No (0) * Yes (1) |
| Alternative diagnosis to DVT as likely or more likely | **Options:**   * No (0) * Yes (-2) |

## FORMULA

Addition of the selected points:

|  |  |  |
| --- | --- | --- |
| **Variable** | | **Points** |
| Active cancer (treatment or palliation within 6 months) | No | 0 |
| Yes | 1 |
| Bedridden recently >3 days or major surgery within 12 weeks | No | 0 |
| Yes | 1 |
| Calf swelling >3 cm compared to the other leg (measured 10 cm below tibial tuberosity) | No | 0 |
| Yes | 1 |
| Collateral (nonvaricose) superficial veins present | No | 0 |
| Yes | 1 |
| Entire leg swollen | No | 0 |
| Yes | 1 |
| Localized tenderness along the deep venous system | No | 0 |
| Yes | 1 |
| Pitting edema, confined to symptomatic leg | No | 0 |
| Yes | 1 |
| Paralysis, paresis, or recent plaster immobilization of the lower extremity | No | 0 |
| Yes | 1 |
| Previously documented DVT | No | 0 |
| Yes | 1 |
| Alternative diagnosis to DVT as likely or more likely | No | 0 |
| Yes | -2 |

Note: there are a few versions of the criteria with minor differences based on the study; this set is the most widely validated, based on [Wells 2003](https://www.ncbi.nlm.nih.gov/pubmed/14507948).

## FACTS & FIGURES

Interpretation:

|  |  |  |
| --- | --- | --- |
| **Wells' Score** | **Risk group** | **Prevalence of DVT** |
| ≤0 | Low/unlikely | 5% |
| 1-2 | Moderate | 17% |
| ≥3 | High/likely | 17-53% |

## EVIDENCE APPRAISAL

* Wells' Criteria were derived from a number of studies by Wells et al ([Wells 1995](https://www.ncbi.nlm.nih.gov/pubmed/7752753), [Wells 1997](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(97)08140-3/fulltext), [Wells 2003](https://www.ncbi.nlm.nih.gov/pubmed/14507948)) in an attempt to stratify risk of DVT in symptomatic outpatients, since at the time, the clinical diagnosis of DVT was thought to be inaccurate, leading to widespread overuse of confirmatory imaging.
* [Wells 2003](https://www.ncbi.nlm.nih.gov/pubmed/14507948) took 1,096 outpatients with concern for DVT and randomized them into two groups after applying Wells’ Criteria for DVT. 520 were the control and had an ultrasound, 562 were tested with a d-dimer. If the dimer was positive these patients also received an US. If negative no US was performed. 16% of the control group and 15.5 percent of the test group had DVT or PE resulting in overall incidence of 15.7%.
* Of the 520 control patients, 279 were considered DVT unlikely, and 241 were DVT likely. 16 (5.7%) of the unlikely patients had DVT or PE. In the control group overall, 6 (1.4%) patients who had been initially ruled out had a diagnosis of DVT on 3 month follow-up.
* Of the 562 patients in the d-dimer group, 315 were considered unlikely and 247 considered likely to have DVT. 71 (28.7%) of the likely group had DVT. 38.8 percent of the unlikely group had a negative d-dimer and did not undergo further testing. 2 of these patients (0.4%) had confirmed DVT on 4 and 14 d follow-up. The negative predictive value of d-dimer was 96.1%.
* This algorithm was then supported by Scarvelis and Wells in 2006 ([Scarvelis 2006](https://www.ncbi.nlm.nih.gov/pubmed/17060659)).
* A systematic review ([Wells 2006](https://www.ncbi.nlm.nih.gov/pubmed/16403932)) was performed in 2006 which evaluated 14 studies with 8239 patients that used the Wells score to predict risk of DVT and evaluated for incidence of DVT in association with moderate or high sensitivity d-dimer. This has been utilized by the American College of Chest physicians to provide guidelines for the evaluation of DVT.