

How Often Does *Shabbat Rosh Chodesh* Occur?

Excluding *Rosh HaShanah*, which on average starts on *Shabbat* in 2 of 7 years.

Analysis by Dr. Irv Bromberg, University of Toronto <<http://www.sym454.org/hebrew/>>.

Hebrew Date	Frequency	x Years	# in Cycle	% of Years
1 <i>Nisan</i>	3020 / 10773	689472	193280	28.03%
30 <i>Nisan</i>	Never	689472		
1 <i>Iyar</i>	2 / 7	689472	196992	28.57%
1 <i>Sivan</i>	Never	689472		
30 <i>Sivan</i>	73277 / 229824	689472	219831	31.88%
1 <i>Tammuz</i>	Never	689472		
1 <i>Av</i>	79369 / 689472	689472	79369	11.51%
30 <i>Av</i>	3020 / 10773	689472	193280	28.03%
1 <i>Elul</i>	Never	689472		
30 <i>Tishrei</i>	Never	689472		
1 <i>Cheshvan</i>	73277 / 229824	689472	219831	31.88%
30 <i>Cheshvan</i> / perfect years	Never	309788		
1 <i>Kislev</i>	Never	689472		
30 <i>Kislev</i> / non-deficient years	3020 / 10773	513573	193280	28.03%
1 <i>Tevet</i>	Never	689472		
1 <i>Shevat</i>	17209 / 57456	689472	206508	29.95%
30 <i>Shevat</i>	Never	689472		
1 <i>Adar</i> / common years	4391 / 36288	435456	52692	7.64%
1 <i>Adar Rishon</i> / leap years	28633 / 84672	254016	85899	12.46%
30 <i>Adar Rishon</i> / leap years	Never	254016		
1 <i>Adar Sheini</i> / leap years	3811 / 36288	254016	26677	3.87%

Total *Rosh Chodesh* Days (any weekday): 12362945

Total **Shabbat** *Rosh Chodesh* Days: 1667639

Expected % if *Rosh Chodesh* Equally Any Weekday: 14.286%

% of *Rosh Chodesh* Days that Land on *Shabbat*: 13.489%

(% reduced by consecutive *Rosh Chodesh* days, which can never both be *Shabbat*)

Common Years Per Cycle: 435456 years

+ Leap Years Per Cycle: 254016 years

= Hebrew Years per Cycle: 689472 years

Average # of *Shabbat Rosh Chodesh* per Year: 2.418719

Hebrew Months per Cycle: 8527680 months

Average *Shabbat Rosh Chodesh* Interval: 5.1136247 months

% of Months that have a *Shabbat Rosh Chodesh*: 19.5556%

Weeks per Cycle: 35975351 weeks

Average *Shabbat Rosh Chodesh* Interval: 21.572625 weeks

% of Weeks that End on *Shabbat Rosh Chodesh*: 4.6355%

1 *Iyar* on *Shabbat* has the same frequency as *Rosh HaShanah* starting on *Shabbat* because 1 *Iyar* is always exactly 21 weeks before the next *Rosh HaShanah*.