

Table 5.1 from (1988AJ01): Energy levels of ${}^5\text{He}$ ^a

E_x (MeV)	$J^\pi; T$	$\Gamma_{\text{c.m.}}$ (MeV)	Decay	Reactions
g.s.	$\frac{3^-}{2}; \frac{1}{2}$	0.60 ± 0.02 ^a	n, α	1 , 4 , 6 , 7 , 8 , 9 , 10 , 11 , 12 , 13 , 14 , 15 , 16 , 17 , 18 , 19 , 20 , 21 , 22 , 23 , 24 , 25 , 26 , 27 , 28 , 29
4 ± 1 16.75 ± 0.05	$\frac{1^-}{2}; \frac{1}{2}$ $\frac{3^+}{2}; \frac{1}{2}$	4 ± 1 0.076 ± 0.012	n, α γ , n, d, t, α	4 , 6 , 9 , 10 , 16 , 20 , 21 , 29 1 , 2 , 5 , 6 , 8 , 10 , 11 , 12 , 20 , 21 , 22
19.8 ± 0.4 ^c	$(\frac{3}{2}, \frac{5}{2})^+; \frac{1}{2}$	2.5 ± 0.5	n, d, t, α	2 , 3 , 5 , 8 , 10 , 12 , 14 , 18 , 20 , 21 , 22
$24 - 25$ ^c (35.7 ± 0.4)		broad ≈ 2		20 , 21 18 , 22

^a See [Table 5.2 in \(1966LA04\)](#) and [Table 5.2](#) here. A study by G.M. Hale, D. Dodder and K. Witte on the S -matrix pole parameters for ${}^5\text{He}$ is underway. I thank Dr. Hale for his comments concerning questions regarding R - and S -matrix calculations.

^b Positive-parity states are predicted to lie at $E_x \approx 5$ MeV ($\frac{1}{2}^+$) and 12 MeV ($\frac{3}{2}^+, \frac{5}{2}^+$): see [\(1988WO10\)](#).

^c See the “States of ${}^5\text{He}$ ” section in [\${}^5\text{He}\$ in \(1974AJ01\)](#).