

David Lye Chien Boon



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Research/Innovation Interests:

- SARS-CoV-2
- Antimicrobial Resistance
- Clinical Trials

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Biography

Professor David Lye is director of Infectious Disease Research and Training Office at National Centre for Infectious Diseases and deputy executive director, Programme for Research in Epidemic Preparedness and Response. He is professor at Lee Kong Chian School of Medicine and Yong Loo Lin School of Medicine. He is senior consultant, Department of Infectious Diseases, Tan Tock Seng Hospital.

He has chaired the National Antimicrobial Stewardship Expert Panel since 2014. He is a member of National Antimicrobial Resistance Control Committee and One Health Antimicrobial Resistance Project Team, Ministry of Health, Singapore.

Professor Lye is president, Society of Infectious Disease (Singapore) and Asia Pacific Society of Clinical Microbiology and Infection. He is a member of executive committee, International Society of Antimicrobial Chemotherapy, and council of International Society of Infectious Diseases.

Professor Lye has published more than 360 peer-reviewed manuscripts in journals such as NEJM, Lancet, JAMA, Lancet Respiratory Medicine, Lancet Infectious Diseases, Lancet Microbe, Lancet Global Health as well as Science, Nature Biotechnology, Nature Microbiology, Nature Communications, Science Translational Medicine, Journal Clinical Investigation and Journal Experimental Medicine. He is a Clarivate Highly Cited Researcher in 2022 and 2023.

Selected Publications

- Beigel JH, Tomashek KM, Dodd LE, Mehta AK, Zingman BS, Kalil AC, Hohmann E, Chu HY, Luetkemeyer A, Kline S, Lopez de Castilla D, Finberg RW, Dierberg K, Tapson V, Hsieh L, Patterson TF, Paredes R, Sweeney DA, Short WR, Touloumi G, Lye DC, Ohmagari N, Oh MD, Ruiz-Palacios GM, Benfield T, Fätkenheuer G, Kortepeter MG, Atmar RL, Creech CB, Lundgren J, Babiker AG, Pett S, Neaton JD, Burgess TH, Bonnett T, Green M, Makowski M, Osinusi A, Nayak S, Lane HC; ACTT-1 Study Group Members. Remdesivir for the Treatment of Covid-19 - Final Report. *N Engl J Med*. 2020 Nov 5;383(19):1813-1826. doi: 10.1056/NEJMoa2007764. Epub 2020 Oct 8. PMID: 32445440; PMCID: PMC7262788.
https://www.nejm.org/doi/10.1056/NEJMoa2007764?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%20pubmed
- Goldman JD, Lye DCB, Hui DS, Marks KM, Bruno R, Montejano R, Spinner CD, Galli M, Ahn MY, Nahass RG, Chen YS, SenGupta D, Hyland RH, Osinusi AO, Cao H, Blair C, Wei X, Gaggar A, Brainard DM, Towner WJ, Muñoz J, Mullane KM, Marty FM, Tashima KT, Diaz G, Subramanian A; GS-US-540-5773 Investigators. Remdesivir for 5 or 10 Days in Patients with Severe Covid-19. *N Engl J Med*. 2020 Nov 5;383(19):1827-1837. doi: 10.1056/NEJMoa2015301. Epub 2020 May 27. PMID: 32459919; PMCID: PMC7377062.
<https://www.nejm.org/doi/10.1056/NEJMoa2015301>
- Kalil AC, Patterson TF, Mehta AK, Tomashek KM, Wolfe CR, Ghazaryan V, Marconi VC, Ruiz-Palacios GM, Hsieh L, Kline S, Tapson V, Iovine NM, Jain MK, Sweeney DA, El Sahly HM, Branche AR, Regalado Pineda J, Lye DC, Sandkovsky U, Luetkemeyer AF, Cohen SH, Finberg RW, Jackson PEH, Taiwo B, Paules CI, Arguinchona H, Erdmann N, Ahuja N, Frank M, Oh MD, Kim ES, Tan SY, Mularski RA, Nielsen H, Ponce PO, Taylor BS, Larson L, Roupheal NG, Saklawi Y, Cantos VD, Ko ER, Engemann JJ, Amin AN, Watanabe M, Billings J, Elie MC, Davey RT, Burgess TH, Ferreira J, Green M, Makowski M, Cardoso A, de Bono S, Bonnett T, Proschan M, Deye GA, Dempsey W, Nayak SU, Dodd LE, Beigel JH; ACTT-2 Study Group Members. Baricitinib plus Remdesivir for Hospitalized Adults with Covid-19. *N Engl J Med*. 2021 Mar 4;384(9):795-807. doi: 10.1056/NEJMoa2031994. Epub 2020 Dec 11. PMID: 33306283; PMCID: PMC7745180.
<https://www.nejm.org/doi/full/10.1056/NEJMoa2031994>
- Tan CW, Chia WN, Young BE, Zhu F, Lim BL, Sia WR, Thein TL, Chen MI, Leo YS, Lye DC, Wang LF. Pan-Sarbecovirus Neutralizing Antibodies in BNT162b2-Immunized SARS-CoV-1 Survivors. *N Engl J Med*. 2021 Oct 7;385(15):1401-1406. doi: 10.1056/NEJMoa2108453. Epub 2021 Aug 18. PMID: 34407341; PMCID: PMC8422514.
https://www.nejm.org/doi/10.1056/NEJMoa2108453?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%20pubmed
- Young BE, Fong SW, Chan YH, Mak TM, Ang LW, Anderson DE, Lee CY, Amrun SN, Lee B, Goh YS, Su YCF, Wei WE, Kalimuddin S, Chai LYA, Pada S, Tan SY, Sun L, Parthasarathy P, Chen YYC, Barkham T, Lin RTP, Maurer-Stroh S, Leo YS, Wang LF, Renia L, Lee VJ, Smith GJD, Lye DC, Ng LFP. Effects of a major deletion in the SARS-CoV-2 genome on the severity of infection and the inflammatory response: an observational cohort study. *Lancet*. 2020 Aug 29;396(10251):603-611. doi: 10.1016/S0140-6736(20)31757-8. Epub 2020 Aug 18. PMID: 32822564; PMCID: PMC7434477.
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)31757-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31757-8/fulltext)

- Chiew CJ, Premikha M, Chong CY, Wei WE, Ong B, Lye DC, Heng D, Lee VJ, Tan KB. Effectiveness of primary series and booster vaccination against SARS-CoV-2 infection and hospitalisation among adolescents aged 12-17 years in Singapore: a national cohort study. *Lancet Infect Dis.* 2023 Feb;23(2):177-182. doi: 10.1016/S1473-3099(22)00573-4. Epub 2022 Sep 28.
[https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(22\)00573-4/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00573-4/fulltext)
- Tan CY, Chiew CJ, Pang D, Lee VJ, Ong B, Lye DC, Tan KB. Protective immunity of SARS-CoV-2 infection and vaccines against medically attended symptomatic omicron BA.4, BA.5, and XBB reinfections in Singapore: a national cohort study. *Lancet Infect Dis.* 2023 Jul;23(7):799-805. doi: 10.1016/S1473-3099(23)00060-9. Epub 2023 Mar 13.
[https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(23\)00060-9/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(23)00060-9/fulltext)
- Tong SYC, Lye DC, Yahav D, Sud A, Robinson JO, Nelson J, Archuleta S, Roberts MA, Cass A, Paterson DL, Foo H, Paul M, Guy SD, Tramontana AR, Walls GB, McBride S, Bak N, Ghosh N, Rogers BA, Ralph AP, Davies J, Ferguson PE, Dotel R, McKew GL, Gray TJ, Holmes NE, Smith S, Warner MS, Kalimuddin S, Young BE, Runnegar N, Andresen DN, Anagnostou NA, Johnson SA, Chatfield MD, Cheng AC, Fowler VG Jr, Howden BP, Meagher N, Price DJ, van Hal SJ, O'Sullivan MVN, Davis JS; Australasian Society for Infectious Diseases Clinical Research Network. Effect of Vancomycin or Daptomycin With vs Without an Antistaphylococcal β -Lactam on Mortality, Bacteremia, Relapse, or Treatment Failure in Patients With MRSA Bacteremia: A Randomized Clinical Trial. *JAMA.* 2020 Feb 11;323(6):527-537. doi: 10.1001/jama.2020.0103. PMID: 32044943; PMCID: PMC7042887.
<https://jamanetwork.com/journals/jama/fullarticle/2760737>
- Young BE, Ong SWX, Kalimuddin S, Low JG, Tan SY, Loh J, Ng OT, Marimuthu K, Ang LW, Mak TM, Lau SK, Anderson DE, Chan KS, Tan TY, Ng TY, Cui L, Said Z, Kurupatham L, Chen MI, Chan M, Vasoo S, Wang LF, Tan BH, Lin RTP, Lee VJM, Leo YS, Lye DC; Singapore 2019 Novel Coronavirus Outbreak Research Team. Epidemiologic Features and Clinical Course of Patients Infected With SARS-CoV-2 in Singapore. *JAMA.* 2020 Apr 21;323(15):1488-1494. doi: 10.1001/jama.2020.3204.
<https://jamanetwork.com/journals/jama/fullarticle/2762688>
- Hansen J, Baum A, Pascal KE, Russo V, Giordano S, Wloga E, Fulton BO, Yan Y, Koon K, Patel K, Chung KM, Hermann A, Ullman E, Cruz J, Rafique A, Huang T, Fairhurst J, Libertiny C, Malbec M, Lee WY, Welsh R, Farr G, Pennington S, Deshpande D, Cheng J, Watty A, Bouffard P, Babb R, Levenkova N, Chen C, Zhang B, Romero Hernandez A, Saotome K, Zhou Y, Franklin M, Sivapalasingam S, Lye DC, Weston S, Logue J, Haupt R, Frieman M, Chen G, Olson W, Murphy AJ, Stahl N, Yancopoulos GD, Kyratsous CA. Studies in humanized mice and convalescent humans yield a SARS-CoV-2 antibody cocktail. *Science.* 2020 Aug 21;369(6506):1010-1014. doi: 10.1126/science.abd0827. Epub 2020 Jun 15. PMID: 32540901; PMCID: PMC7299284.
https://www.science.org/doi/full/10.1126/science.abd0827?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Aacrossref.org

Notable Research/Innovation Awards & Grants from Past 5 Years

Name of Awards & Grants	Year Obtained
<p align="center">NMRC COVID-19 Research Fund</p> <p>A Multicenter, Adaptive, Randomized Blinded Controlled Trial of the Safety and Efficacy of Investigational Therapeutics for the Treatment of COVID-19 in Hospitalized Adults</p>	2020
<p align="center">NMRC Clinical Trial Grant Investigator-Initiated Trials</p> <p>Early oral step-down versus continued intravenous antibiotic therapy for uncomplicated Gram-negative bacteraemia</p>	2021
<p align="center">NMRC Clinician Scientist Individual Research Grant (CS-IRG)</p> <p>Gut microbiome recovery in patients with Gram-negative Bacteraemia receiving early oral stepdown antibiotic therapy versus prolonged/continued intravenous antibiotic therapy</p>	2022
<p align="center">NMRC Clinician Scientist Individual Research Grant (CS-IRG)</p> <p>Quantifying the risk of gut microbiome disruption and disease due to antibiotic therapy by leveraging on the Singapore-led multicentre INVEST trial</p>	2023

Translating Research/Innovation Into Healthcare

2022:

- Which booster shot is more effective against Omicron? Published on 07 Jan 2022.
<https://youtu.be/hSqB0WMIZ2k>
- Up close with Associate Professor David Lye. Published on 01 Feb 2022.
<https://www.ntu.edu.sg/medicine/news-events/magazines-and-newsletters/the-lkmedicine-february-2022/profile-up-close-with-associate-professor-david-lye>
- S'pore study finds mixing for Covid-19 booster jab more effective in fending off infection, severe disease. Published on 12 Feb 2022. <https://www.todayonline.com/singapore/spore-study-finds-mixing-covid-19-booster-jab-more-effective-fending-infection-severe-disease-1815381>
- "Data from 700,000 locals show mixed vaccination for booster more effective 本地 70 万人数据研究发现 混打追加剂 防疫力更佳" Published on 13 Feb 2022. *No url
- "Local study: Booster jab with another mRNA vaccine effective in reducing infection rates 追加剂打另一款 mRNA 疫苗 本地研究：能有效降低感染率". Published on 14 Feb 2022.
<https://www.zaobao.com.sg/news/singapore/story20220214-1242384>
- COVID-19: Not wise to get virus to build immunity / Not time for an 'Omicron party', experts warn. Published on 22 Feb 2022. <https://www.straitstimes.com/singapore/health/it-is-not-the-time-to-have-a-covid-19-party-even-if-omicron-infections-are-milder>
- Evidence shows vaccination can help reduce symptoms of long COVID. Published on 22 Feb 2022.
<https://www.straitstimes.com/singapore/health/askst-can-vaccination-reduce-symptoms-of-long-covid>

- "Experts: Most COVID-19 death cases were unvaccinated elderly with comorbidities' 部分因奥密克戎引发重症 专家：多数冠病死者 是未打疫苗患其他疾病长者" Published on 22 Feb 2022.
<https://www.zaobao.com.sg/news/singapore/story20220222-1245109>
- "Vaccine unable to fully eliminate effects, not time for 'party' yet 疫苗未能完全除去副作用 未是时候开派对" Published on 22 Feb 2022. *No url
- Severe symptoms more likely in those who took Sinovac jab. Published on 14 Apr 2022.
<https://www.straitstimes.com/singapore/health/severe-covid-19-symptoms-5-times-more-likely-in-those-infected-who-got-sinovac-vaccine-than-pfizer-one-study>
- Pfizer gives extra protection than Sinovac. Published on 14 Apr 2022. *No url
- Severe Covid-19 symptoms 5 times more likely in patients who got Sinovac rather than Pfizer jab: Study. Published on 14 Apr 2022. <https://tnp.straitstimes.com/lifestyle/health/severe-covid-19-symptoms-5-times-more-likely-patients-who-got-sinovac-rather-pfizer>
- "Local study: Compared with mRNA vaccines, those who received Sinovac vaccine stand five times higher chances of developing severe symptoms after contracting COVID-19 本地研究：施打科兴者染冠病 重症风险高 5 倍". Published on 14 Apr 2022. *No url
- Clinical trials evolving as they advance treatment. Published on 23 May 2022.
<https://www.straitstimes.com/singapore/spore-sets-sights-on-being-regional-centre-for-clinical-trials-from-diabetes-to-cancer>
- Local study shows unvaccinated individuals have the lowest antibody against new virus strain even if they had been infected by BA.1 or BA.2 before 本地研究：未接种 即使染过 BA.1 或 BA.2 对新毒株抗体量最低. Published on 16 Aug 2022. *No url