# Da-Wen Lu – President, Taiwan Glaucoma Society



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*Prof Da-Wen Lu, President of the Taiwan Glaucoma Society, highlights the organisation's leadership in advancing glaucoma awareness, clinical education, and translational research in Taiwan and across East Asia. Prof Lu lays out his current hot topics: early detection, AI diagnostics, and patient education; discusses Taiwan's strengths as an Asian clinical trial hub; and explains the National Health Insurance reimbursement hurdles that restrict access to novel medications and minimally invasive surgeries.*

**Could you introduce your background, medical training, and your principal areas of clinical practice and research?**

I am an ophthalmologist specialising in glaucoma. I hold both an MD and a PhD, and I completed my glaucoma fellowship at Wills Eye Hospital in Philadelphia under Dr. George L. Spaeth. Currently, I serve as a professor in our department and President of the Taiwan Glaucoma Society. My work encompasses preclinical animal studies evaluating novel compounds as well as leading domestic and US FDA-regulated Phase III clinical trials.

**How is the Taiwan Glaucoma Society structured today, and what are its core priorities regarding membership updates, research, and patient education?**

The Taiwan Glaucoma Society has approximately 80 members. Its core mission is to raise glaucoma awareness, provide clinical and scientific updates to our members, and educate the public. In addition, I served as founding president of a dedicated patient care association that organizes several annual symposiums and educational talks specifically tailored for glaucoma patients and the general public.

**How would you assess Taiwan's standing and advantages as a destination for international clinical trials, particularly for global regulatory submissions such as US FDA studies?**

Taiwan offers a highly favourable environment for clinical trials due to comprehensive National Health Insurance coverage, excellent patient access, and exceptionally high patient compliance. This makes the country an attractive site for sponsors looking to incorporate Asian cohorts into US FDA studies. Furthermore, our healthcare infrastructure and clinical training standards are widely recognized as superior to many regional peers, ensuring reliable study data.

**With glaucoma often termed the "silent thief of sight", how are diagnostic innovations and new devices being integrated into Taiwanese clinics to improve early detection?**

Early detection of glaucoma relies heavily on advanced imaging. Some optical coherence tomography (OCT) systems are manufactured in Taiwan and have undergone initial clinical trials here. Diagnostic devices, however, account for a relatively small share of US FDA-regulated trials in Taiwan, most of which focus on pharmaceuticals. Beyond early detection, we have also evaluated micro-invasive surgical devices tailored for angle-closure glaucoma, which is particularly common in Asian populations.

**Some older eye drops, such as beta-blockers, work by reducing fluid production, whereas newer classes like ROCK inhibitors target the eye's natural outflow. How significant is this mechanism in patient care, and what is the availability of ROCK inhibitors in Taiwan?**

Targeting natural outflow is a valuable therapeutic mechanism, but access in Taiwan remains limited because our National Health Insurance is slow to list and reimburse new medications. In

South Korea, Rhopressa was launched in November 2024. Regulatory requirements have delayed its launch in Taiwan. I anticipate Rhopressa or an equivalent compound may enter the domestic market around the second quarter of next year, though it will initially remain an out-of-pocket expense rather than a reimbursed option.

**What is the current clinical outlook for neuroprotective therapies designed to shield the optic nerve directly?**

To date, no medication has definitively demonstrated a neuroprotective effect supported by conclusive clinical data. Research remains ongoing globally, including clinical trials evaluating vitamin B3 as well as early-stage Phase I and Phase II trials for candidate compounds. However, proven neuroprotection in human clinical practice has yet to be established.

**Lowering eye pressure does not always halt vision loss in every patient. What is the realistic clinical outlook for neuroprotective therapies designed to directly shield and rescue optic nerve cells?**

Currently, no drug has conclusively proven to halt visual loss by rescuing optic nerve cells in humans. While ER-100 is being evaluated in a Phase I trial and nicotinamide (a form of vitamin B3) in a Phase III trial overseas, robust evidence-based neuroprotection remains an aspirational goal rather than an available clinical reality.

**How do the clinical profiles and needs of Asian glaucoma patients differ from those in Western populations, particularly given the high prevalence of myopia?**

The disease distribution differs substantially. In Caucasian populations, over 90 percent of patients present with primary open-angle glaucoma (POAG). In Taiwan, approximately 40 percent of cases are POAG, 30 percent are angle-closure glaucoma, and the remaining 30 percent are normal-tension glaucoma (NTG), which is frequently associated with high myopia – a pattern also seen in South Korea and Japan. Angle-closure glaucoma is also an important clinical concern in India, Vietnam, and Thailand. Taiwan’s universal health insurance facilitates routine fundus examinations and prompt visual field testing, helping us detect NTG early, though many clinicians still predominantly treat high-IOP presentations.

**Given the substantial variation in glaucoma subtypes across Asia, how does the regional ophthalmic community collaborate to address these distinct clinical needs?**

The main priority is promoting awareness and sharing epidemiological data to address distinct regional profiles. Within the Asia-Pacific Glaucoma Society (APGS), these differences have led to dedicated special interest groups. For example, countries with high angle-closure burdens – such as Mongolia, where it represents roughly 80 percent of cases – participate in an Angle-Closure Special Interest Group that meets annually. Similarly, Japan and South Korea hold regular bilateral meetings dedicated specifically to normal-tension glaucoma.

**What are the primary public misconceptions regarding the condition, and how does society address them through public awareness initiatives?**

Most people in Taiwan recognize the name “glaucoma” due to extensive coverage on television, YouTube, and during campaigns for World Glaucoma Week and World Sight Day. However, they rarely understand how the disease presents or progresses, meaning many still arrive only at advanced stages. Bridging this gap remains difficult. Fortunately, routine, company-funded health check-ups play a crucial role in early detection, identifying many asymptomatic cases through annual physical exams.

**What are the primary challenges regarding patient access and the reimbursement of innovative glaucoma treatments under Taiwan’s National Health Insurance (NHI) system?**

Taiwan’s National Health Insurance system operates under an annual global budget, so cost is a major consideration when deciding whether to cover new treatments. The system covers many commonly prescribed glaucoma eye drops, but the cost of surgical devices can still be a barrier for patients. In Taiwan, for example, patients who receive an iStent as part of minimally invasive glaucoma surgery (MIGS) pay the full cost of the implant. Affordability is a concern in South Korea as well, where even patients who qualify for coverage pay half the approved price of the implant.

**How can Taiwan increase its scientific visibility in global ophthalmology, and what regulatory barriers currently affect clinical research participation?**

To raise our global profile, we must follow models like the Singapore National Eye Centre (SNEC) by producing higher publication volumes and maintaining a consistent presence at major international congresses. Domestically, regulatory hurdles must be streamlined. Overly rigid institutional review boards have previously impeded participation in landmark international studies, as seen when local ethical objections prevented participation in the UK-led EAGLE trial on early clear-lens extraction.

**What is Taiwan's current involvement in glaucoma drug development and clinical trials?**

Taiwan has historically participated in multinational Phase III trials rather than early discovery. However, that is shifting: a Taiwan-developed ROCK inhibitor is currently undergoing Phase II clinical trials. This candidate shows promise as the first domestically developed glaucoma medication aimed at the global market, with plans to advance into US FDA-regulated Phase III trials upon completion.

**With diagnostic innovations transforming early detection, what role do you see artificial intelligence playing in the diagnosis and clinical assessment of glaucoma?**

AI will dramatically enhance early detection by mitigating the inter-observer variability common in manual optic disc examinations. By training on datasets spanning tens of thousands to over 100,000 images across multiple modalities – including fundus photos, optical coherence tomography, and visual fields – AI systems can identify subtle microstructural features invisible to the naked eye, offering diagnostic consistency that can match or exceed human evaluation.

**Do you envision management paradigms shifting from standardised clinical protocols toward more personalised treatment plans?**

We currently lack the clinical decision-support systems required for full personalization, so care follows population-level protocols; for instance, US guidelines favor selective laser trabeculoplasty or prostaglandins as first-line therapy, whereas Taiwanese formularies frequently direct practitioners to beta-blockers. Once clinical algorithms incorporate a patient's systemic health, daily activities, and specific ocular profiles, management will transition away from universal

baseline regimens toward truly individualized care.

**How does the asymptomatic nature of early glaucoma complicate patient education, and could digital tools help bridge that communication gap?**

The “last mile” of patient education is challenging because binocular vision masks progressive field loss, leaving patients unaware of deteriorating vision until significant damage occurs. Chairside verbal explanations are often too abstract to convey this danger. AI-driven visual simulation tools could visually demonstrate how a patient’s specific visual field will contract over time if left untreated, making the threat concrete and encouraging treatment adherence.

**What is the societal perception of surgical intervention in Taiwan, and what is required to advance the adoption of minimally invasive glaucoma surgery (MIGS)?**

Public reluctance remains widespread because many believe surgery itself causes blindness, confusing surgical complications with cases where intervention was delayed until terminal vision loss was inevitable. MIGS provides a safer, earlier alternative to traditional filtration surgery. To drive adoption, we need local clinical data to demonstrate its cost-effectiveness to health authorities, establish NHI reimbursement, and relieve the financial burden on patients.

**Given the long interval between new drug classes entering the market, how do you expect AI and molecular design to influence future glaucoma therapeutics?**

ROCK inhibitors represent one of the few new classes of glaucoma medications introduced in the past two decades, but common side effects like conjunctival hyperemia relegate them largely to second-line use. AI-driven molecular design and structural modification could identify analogues that maintain IOP-lowering potency while eliminating ocular surface discomfort, allowing this class to potentially advance into first-line clinical management**.**

**Looking ahead, what is your outlook on the evolving burden of glaucoma in Taiwan, and what key public health priorities must be addressed?**

Taiwan has approximately 500,000 diagnosed glaucoma patients, and that figure will continue to climb. The widespread use of electronic screens is fuelling an epidemic of high myopia, which is strongly linked to glaucoma. Because myopic glaucoma frequently presents with normal intraocular pressure, it easily evades routine checks. Promoting early, regular fundus and optic nerve examinations for high-risk myopic individuals must become an urgent public health priority.

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