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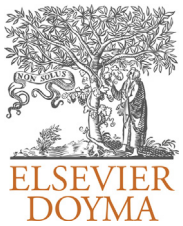

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ORIGINAL ARTICLE

# How frequently should asymptomatic patients be dilated?

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**KEYWORDS**
Pupillary dilation;
Frequency;
Diagnostic yield

**Abstract**
*Purpose:* To determine if routine dilated fundus examination (DFE) should be performed sooner than at 10-year intervals in asymptomatic patients.
*Methods:* Records for all patients consecutively evaluated in a one-year time frame were systematically reviewed. Of those patients who received initial DFE and were living 10 years later, records for sequential DFE were again evaluated to determine presence of clinically-significant, peripheral retinal findings. Databases were also searched in order to determine the number of patients during the same 10-year time period who developed vision or life-threatening peripheral retinal findings. The two groups were cross-matched to determine effectiveness of routine DFE.
*Results:* Only 10 of 592 patients were deemed to have ''clinically-significant'' peripheral retinal findings—none of whom developed untoward outcomes. Of the 29 new retinal detachments and four intraocular tumors discovered during ten years of clinical follow-up, nearly 90% were symptomatic at the time of discovery. Three detachments and one tumor were detected as incidental findings in asymptomatic patients. No further treatment was recommended for the three detachments and the patient with the tumor survives, although with profound loss of vision in the involved eye.
*Conclusions:* In the absence of symptoms, routine DFE seems to have a very low yield for discovery of serious ocular events and appears to be ineffective in altering the course of incidental findings. Routine DFE is not indicated for older, asymptomatic patients—even at decade intervals. The findings of this study should be prospectively confirmed in population-based studies.


**PALABRAS CLAVE**
Dilatación pupilar;
Frecuencia;
Rendimiento diagnóstico

**¿Con qué frecuencia debe dilatarse a los pacientes asintomáticos?**

**Resumen**
*Objetivo:* Determinar si el examen rutinario del fondo de ojo debe realizarse con más frecuencia que a intervalos de 10 años en pacientes asintomáticos.

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*Métodos:* Se revisaron sistemáticamente las historias de todos los pacientes consecutivamente evaluados durante un periodo de un año. Se volvieron a evaluar las historias de aquellos pacientes cuyo fondo había sido inicialmente examinado, y que seguían con vida 10 años después, para determinar la presencia de hallazgos con significación clínica relativa a la retina periférica. Se realizó también una búsqueda en las bases de datos para determinar el número de pacientes, durante el mismo periodo de 10 años, que había desarrollado casos en la retina periférica, con riesgo de vida o visión. Se cruzaron los dos grupos para determinar la efectividad del examen rutinario del fondo de ojo.
*Resultados:* Únicamente 10 de entre 592 pacientes mostraron casos en la retina periférica ''clínicamente significativos'', de los que ninguno evolucionó inadecuadamente. De los 29 nuevos desprendimientos de retina y cuatro tumores intraoculares descubiertos durante los diez años de seguimiento clínico casi el 90% fueron asintomáticos en el momento de su descubrimiento. Se detectaron tres desprendimientos y un tumor como casos incidentales en pacientes asintomáticos. No se recomendó ningún tratamiento adicional para los tres desprendimientos, y el paciente con el tumor sigue vivo, aunque con una profunda pérdida de visión en el ojo afectado.
*Conclusiones:* En ausencia de síntomas, el rendimiento del examen rutinario del fondo de ojo es muy bajo a la hora de descubrir eventos oculares serios, revelándose poco eficaz para alterar el curso de los hallazgos incidentales. Dicho examen no está indicado en pacientes de edad y asintomáticos, incluso a intervalos de 10 años. Los hallazgos de este estudio deberán confirmarse prospectivamente mediante estudios basados en población.


Routine Dilated Fundus Examination (DFE) is considered by many eye care providers to be the standard of ophthalmic care[1]; however, further clarification is required. DFE may be considered to be ''routine'' when completed in the absence of any symptoms suggestive of acute retinal disease (floaters, photopsia, peripheral visual distortions, etc.), or when performed as part of periodic monitoring for chronic ophthalmic conditions (screening for diabetic retinopathy, stereoscopic evaluation of optic nerve head in glaucoma follow-up, etc.). Although for these latter conditions, DFEs are performed systematically and at periodic intervals to monitor for ophthalmic disease progression, the necessity of systematic routine DFE in asymptomatic patients without ophthalmic disease has not been established.

Recommendations for routine ocular examination are published by both ophthalmologic and optometric groups[2,3]; however, the frequencies for routine DFE—again in the absence of symptoms—are not specified.[4,5] While routine DFE in the absence of symptoms may be inexpensive, it is not cost-effective,[6] has a low yield for significant findings,[7] and is not always perceived to be a benign event by patients—especially children.[8] Therefore, it is in the interest of both clinicians and patients to discern the most judicious application of DFE as an ophthalmic procedure.

DFE is performed in order to assess those portions of the peripheral retina that are unobservable through the non-mydriatic pupil. There are myriad conditions to be found in the peripheral retina, although very few of those findings can be considered clinically significant[9] and few are unobservable through undilated pupils.[10]

Through the important research work of Norman Byer, it is now clinically understood that common peripheral retinal findings—lattice degeneration,[11] retinoschisis,[12] cystic retinal tufts,[13] asymptomatic retinal breaks (even from tractional tears)[14]—are largely benign and do not require prophylactic laser retinopexy. Retinal pavingstone degeneration is another common peripheral retinal finding with low clinical risk.[15] In the end, it is the presence of patient symptoms that becomes the most important prognostic indicator associated with clinically significant, peripheral retinal findings.[16]

Choroidal nevi offer a clinical challenge of ambiguous consequence. An estimate of malignant transformation of choroidal nevi into melanoma has been assigned an annual risk of 1 in 8845,[17] although this assignment was based on the assumption that *all* malignant melanomas arise from pre-existing choroidal nevi—the validity of which is uncertain. Stratifying nevi by basal diameter yielded an 18% transformation to melanoma for those lesions larger than 10 mm,[18] perhaps suggesting the need for closer monitoring of those patients; however, patient symptomatology was not reported in this study. With regard to symptomatology for intraocular tumors, presymptomatic detection of metastatic uveal melanoma conferred little additional survival time, calling into question the efficacy of earlier detection.[19]

Ultimately then, the purpose of performing DFE is two-fold: to determine the clinical risk of morbidity (e.g. vision-threatening retinal detachment or neoplasms) or mortality (e.g. life-threatening malignant melanoma, metastatic lesions) in the presence of patient symptoms. Fortunately, both of these conditions are rare. Unfortunately, they are also not always preventable—even with routine DFE.[6] It is the intention of this paper to help better define the role of DFE as a symptom-driven procedure for clinicians to employ judiciously.